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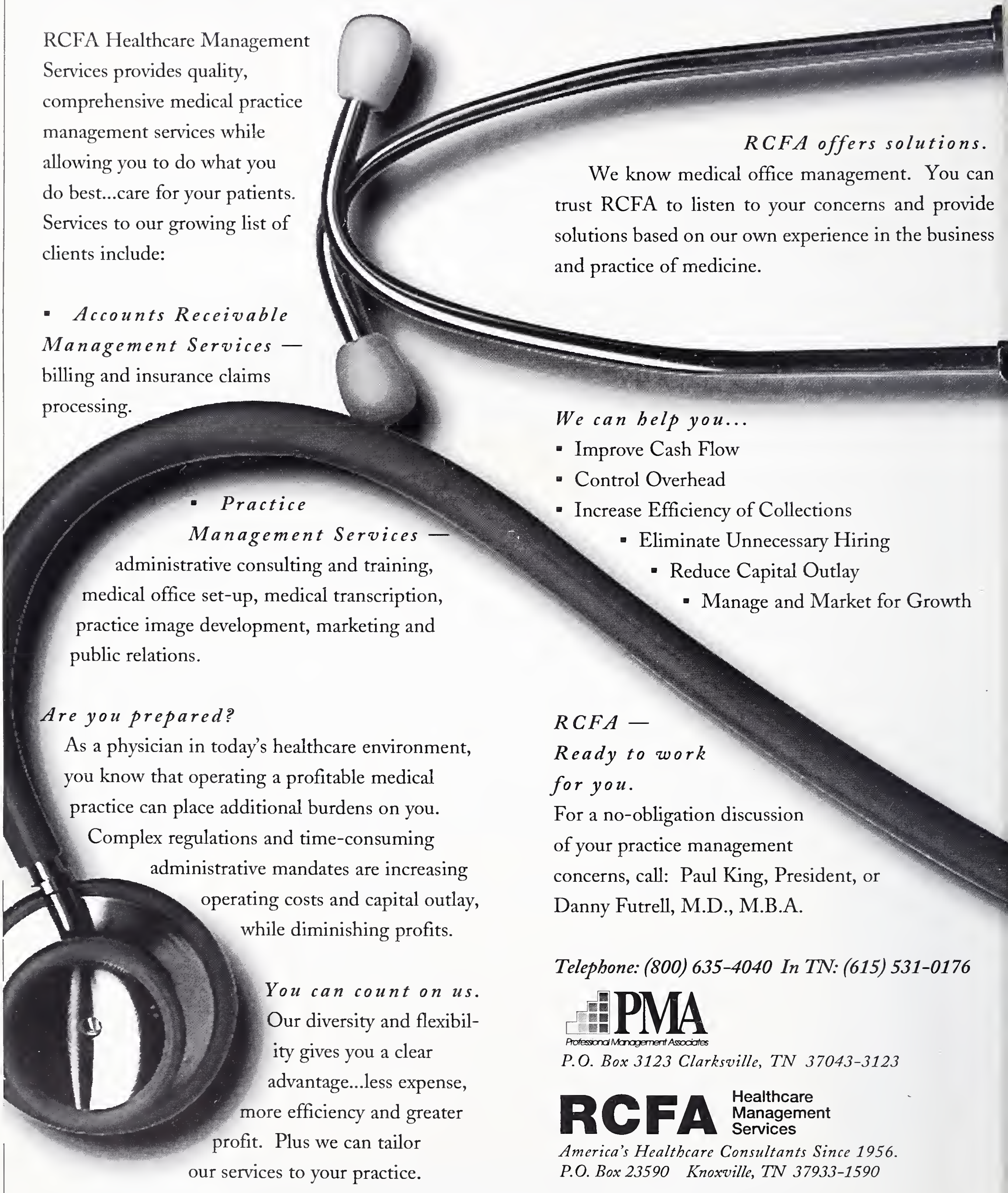

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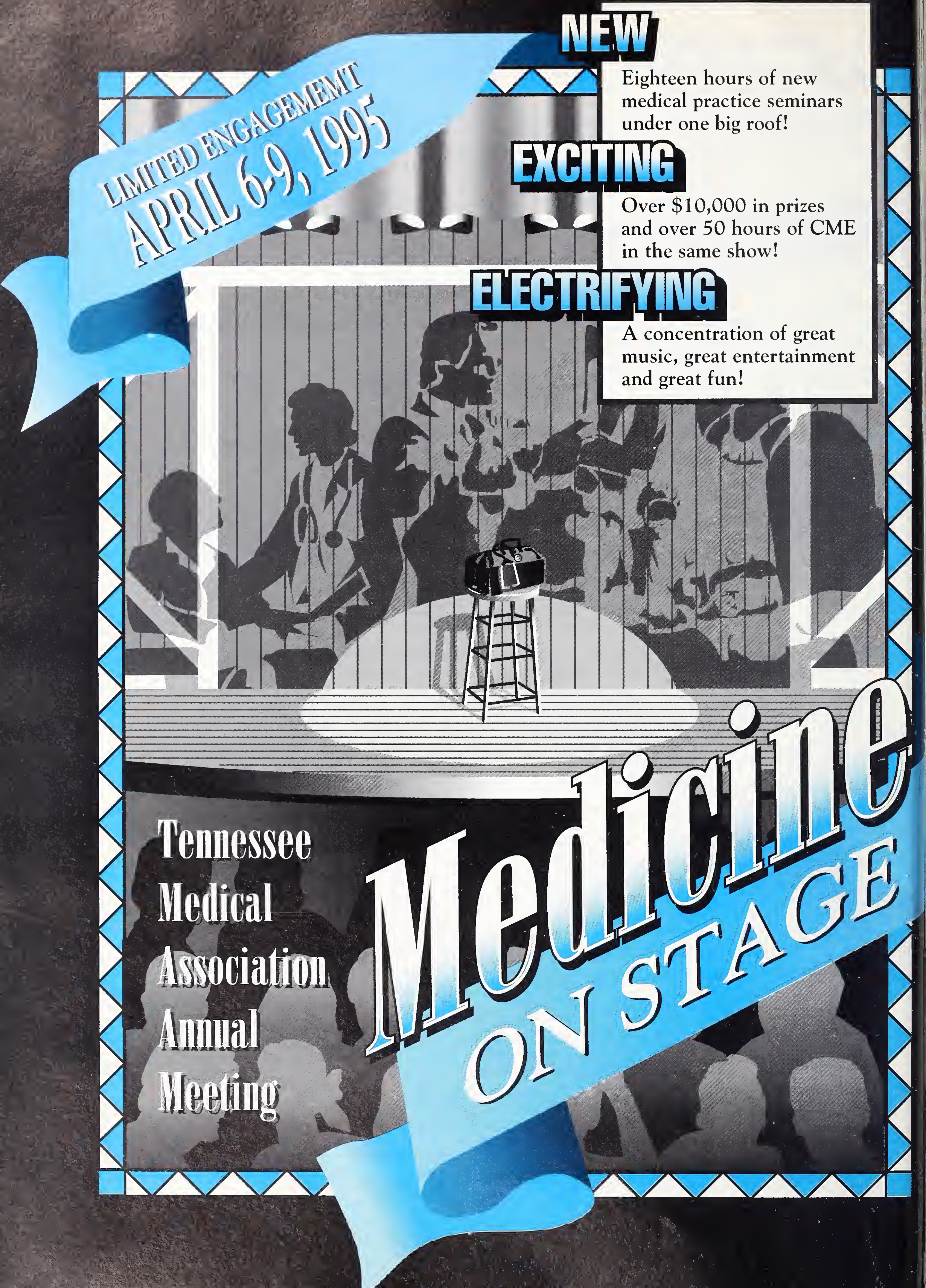

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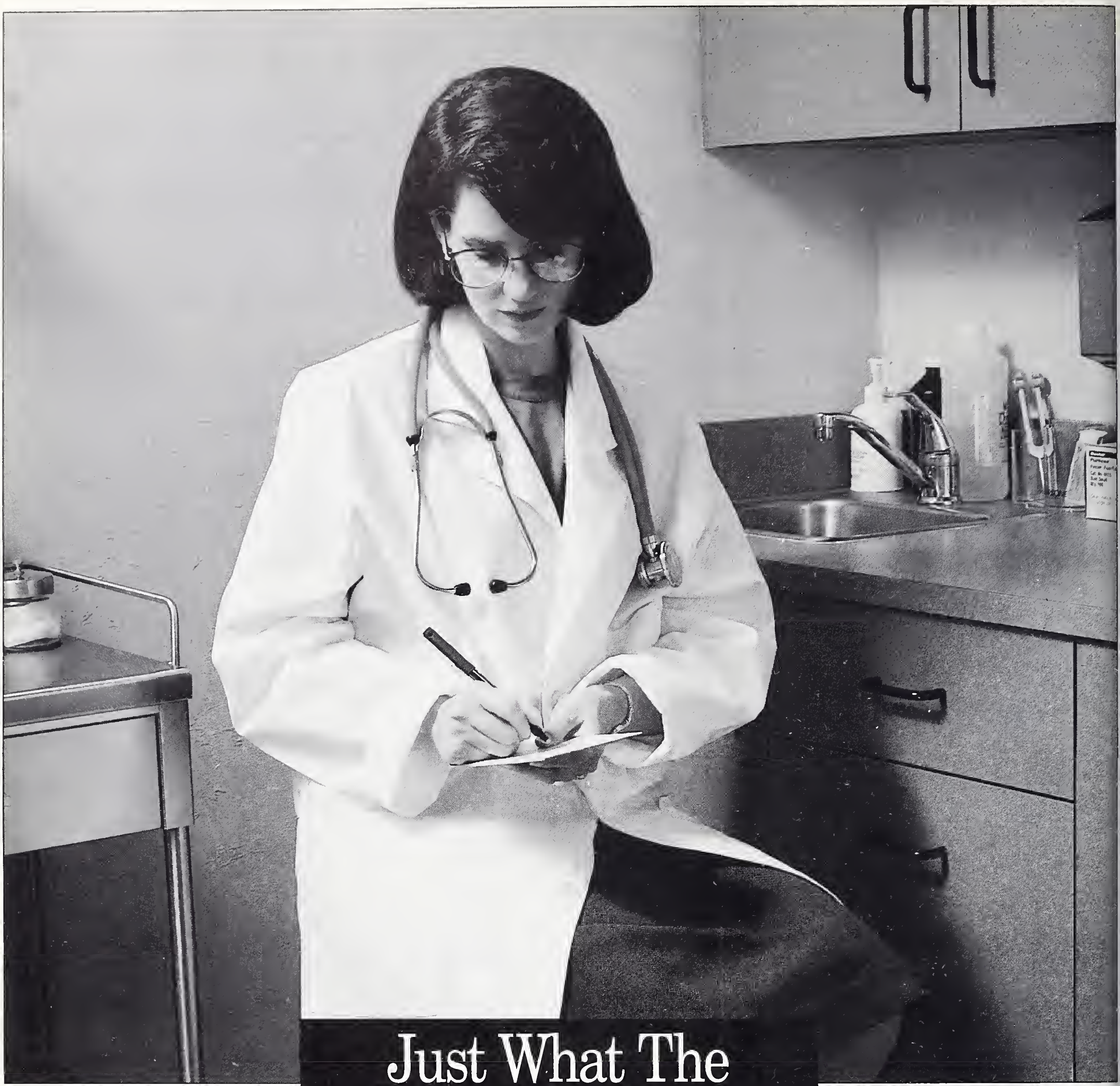

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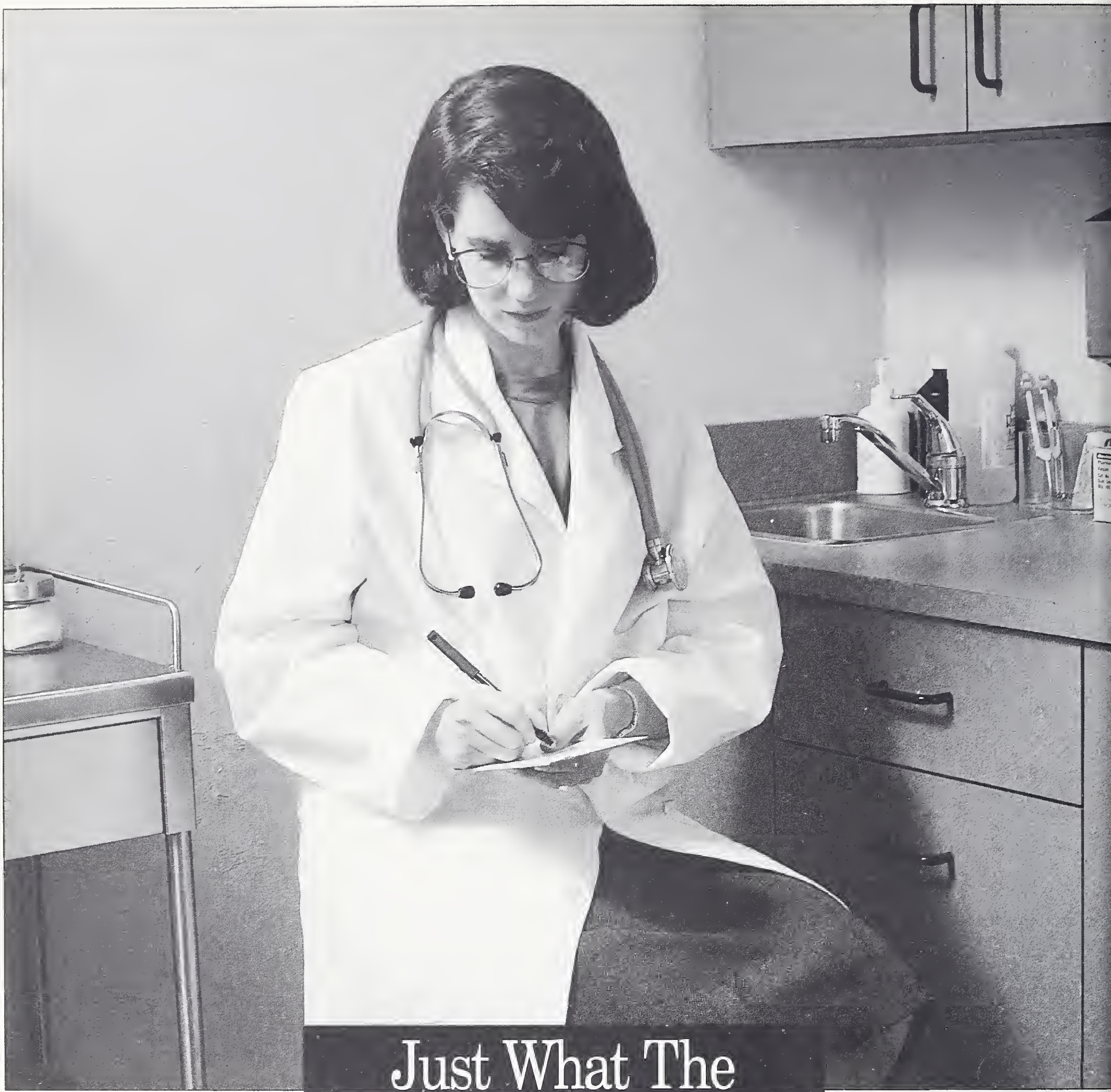

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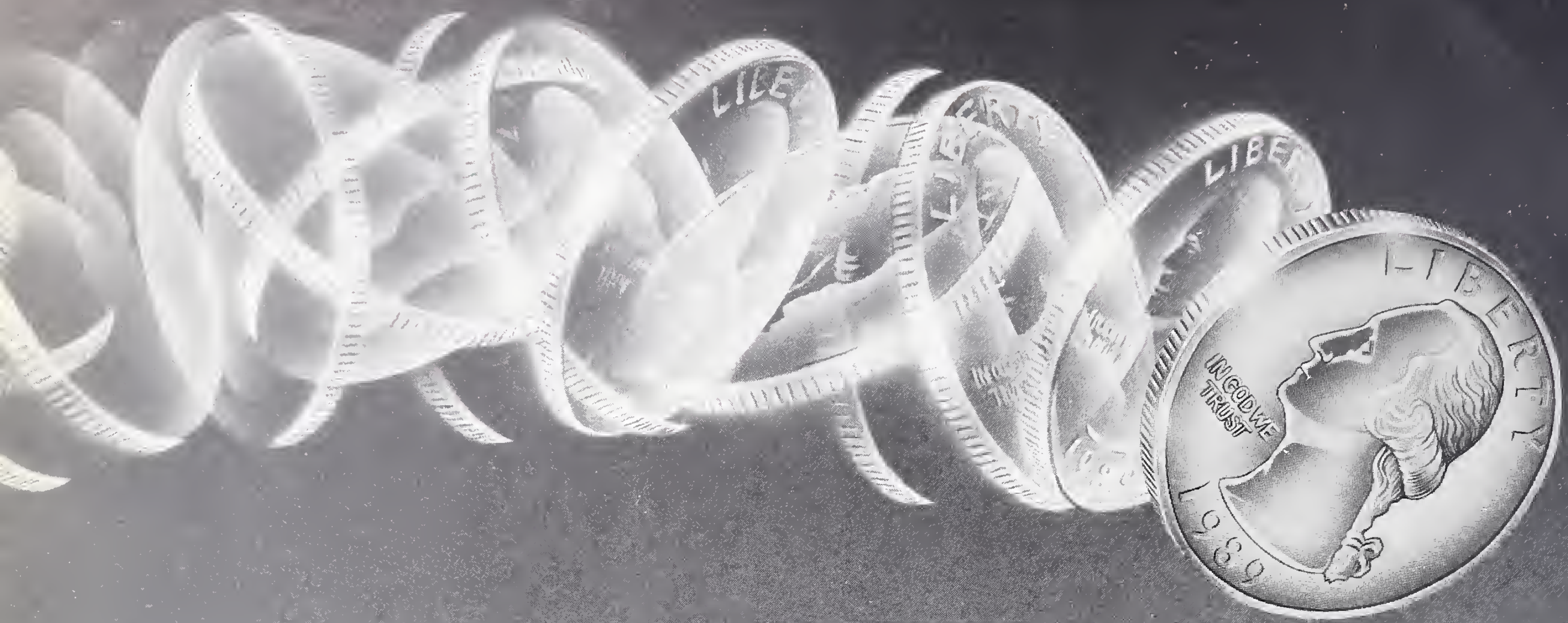

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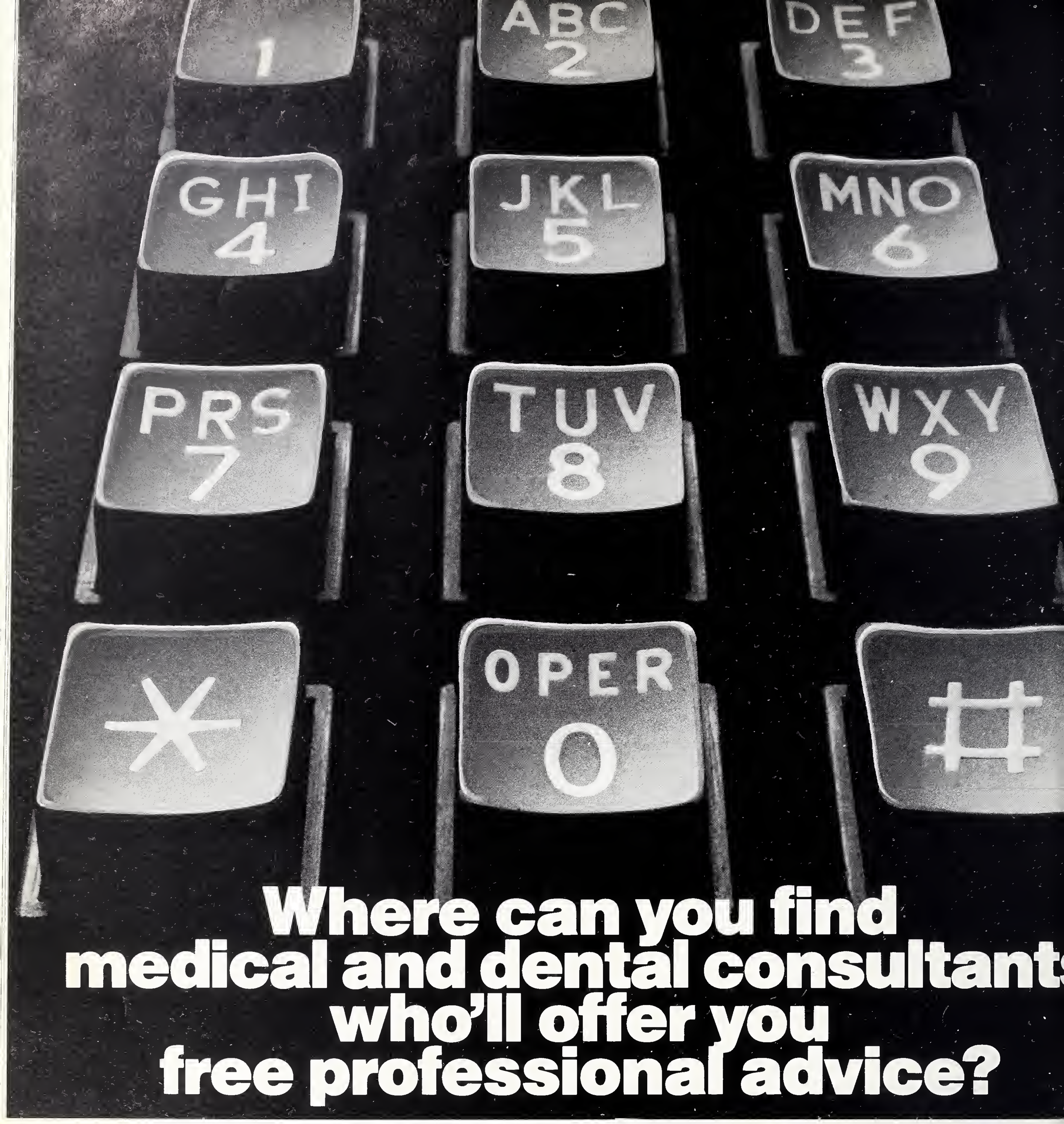

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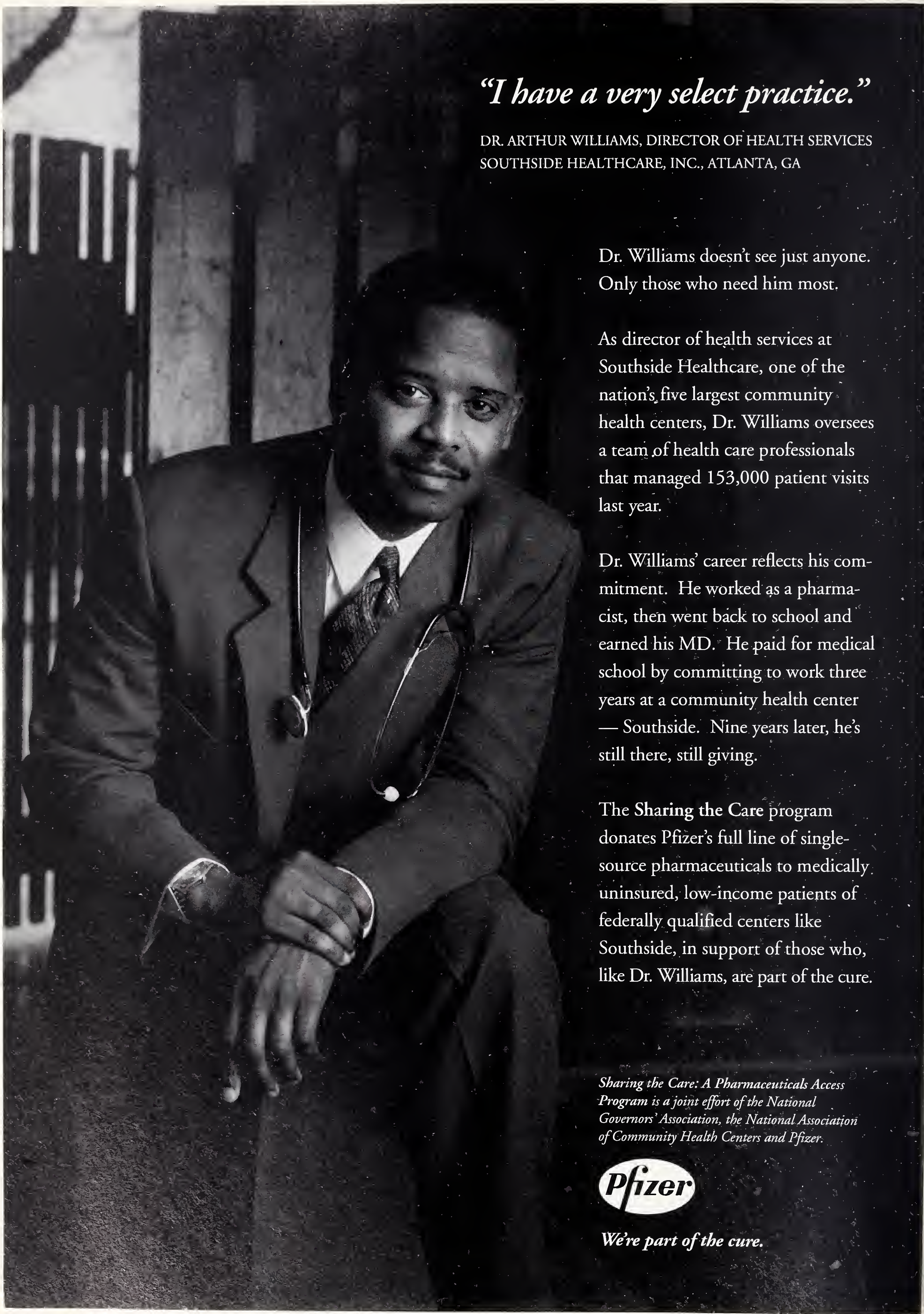

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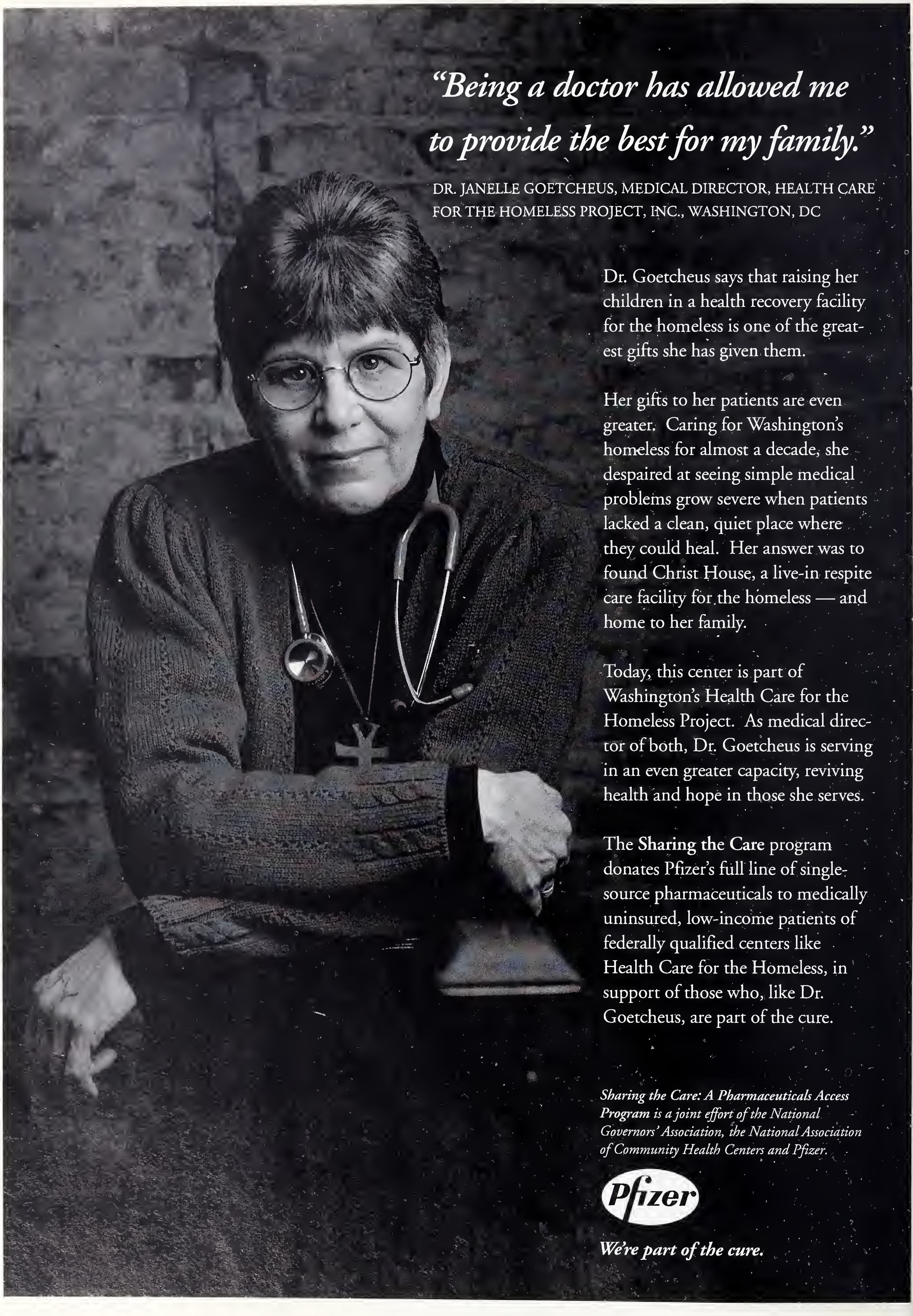

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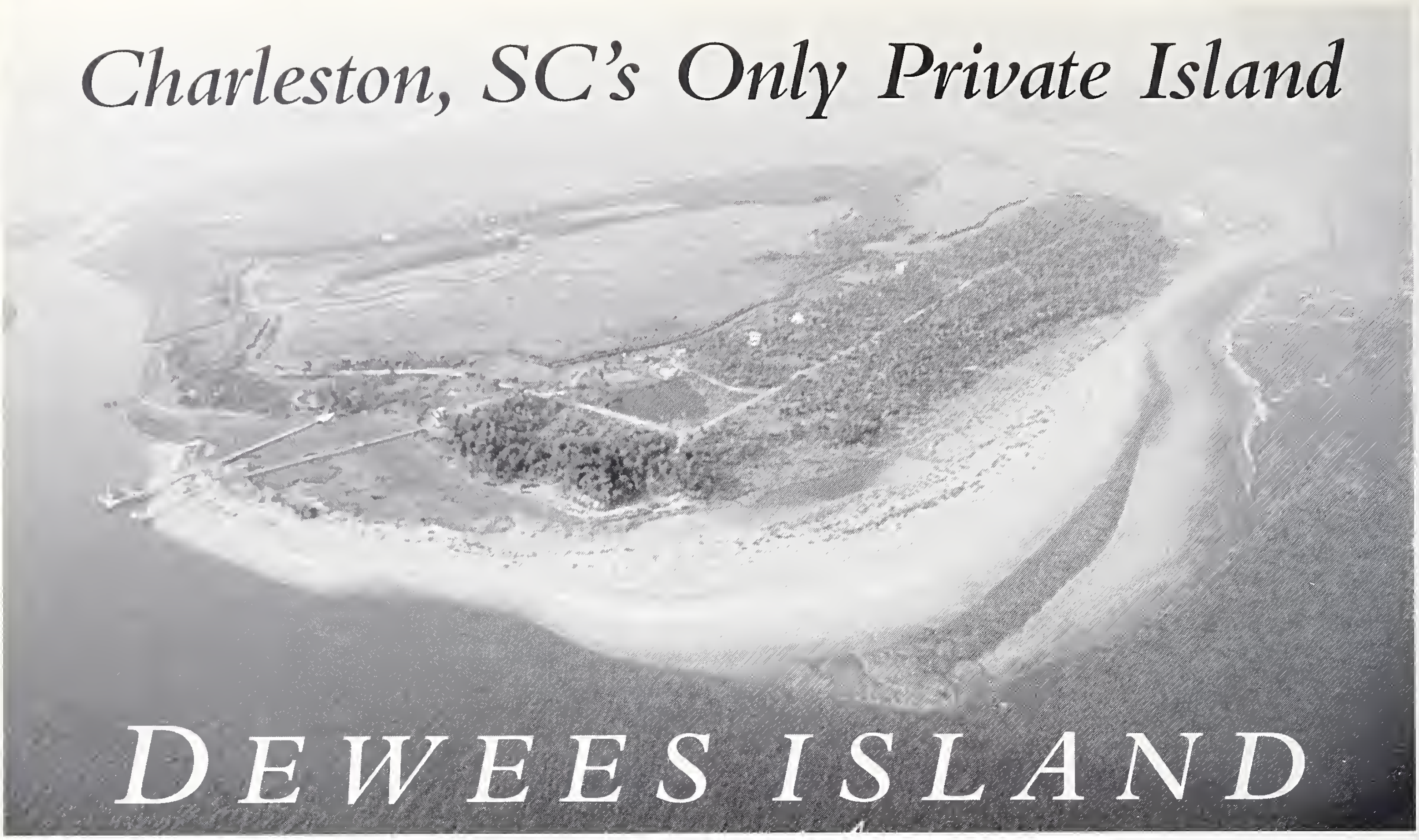

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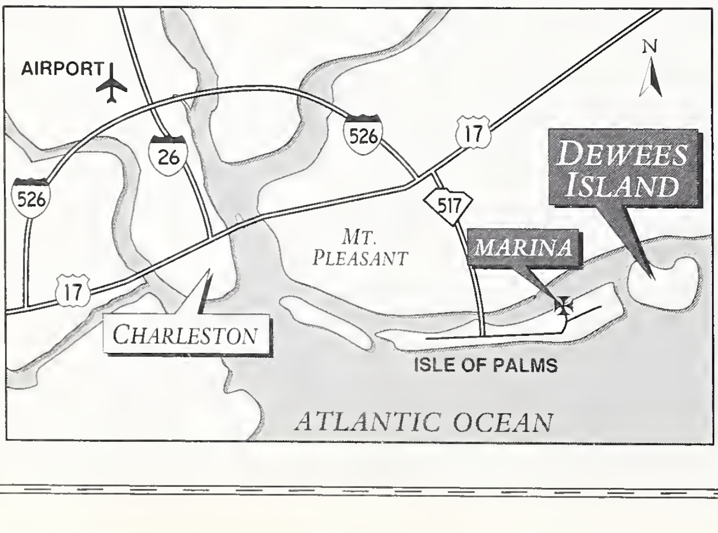

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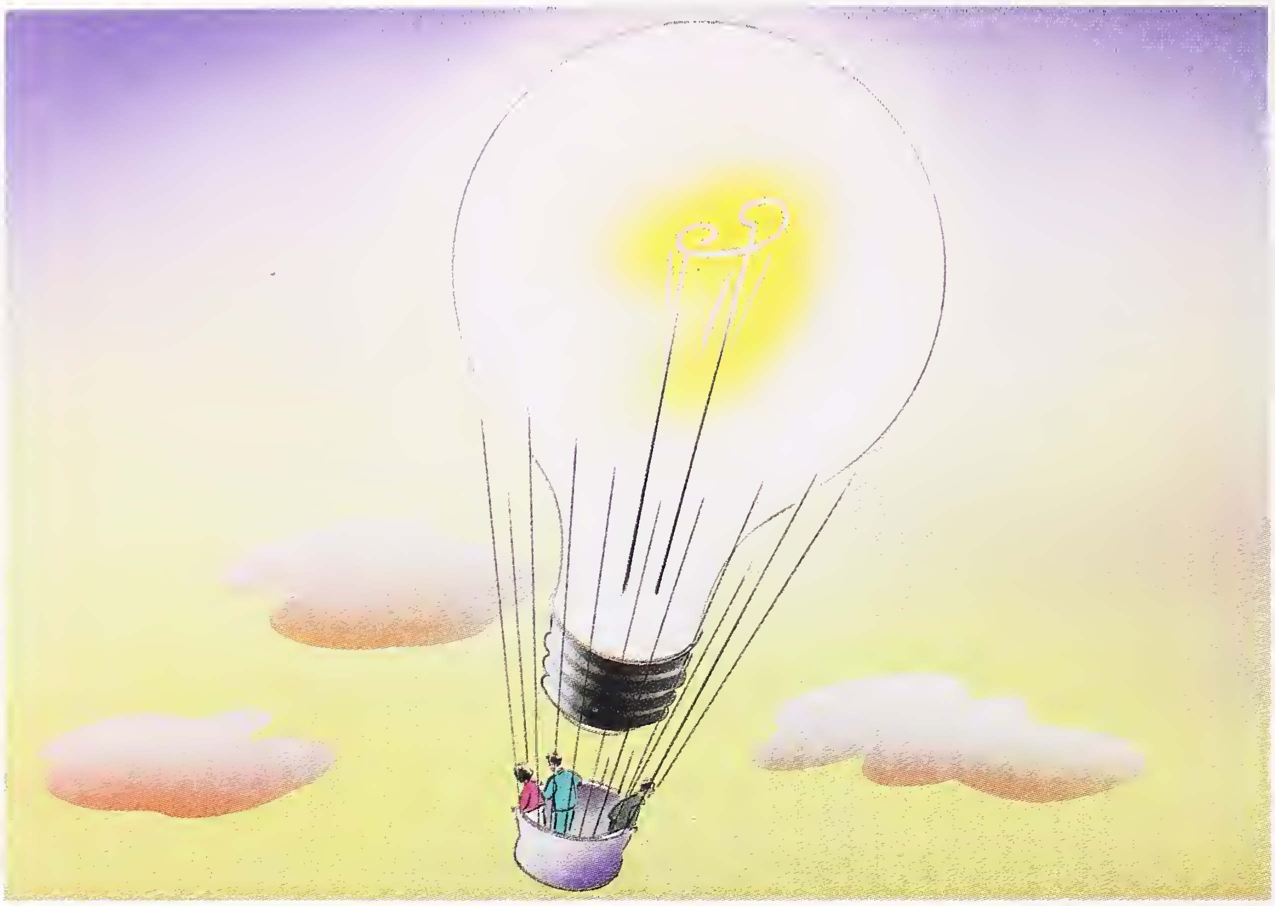

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Who Is Counseling the Pregnant Women Who Smoke?

A Pediatric Viewpoint

WILLIAM B. WADLINGTON, M.D.; KATRINA GWINN, M.D.; and
HARRIS D. RILEY JR., M.D.

Cigarette smoking has been identified as the most important source of preventable morbidity and premature mortality in the United States. A total of 418,690 deaths in the United States was attributed to smoking in 1990. More young women than young men smoke today.[1] The hazards of maternal smoking to the fetus and of passive smoking to infants and children have been widely documented.[2]

Of the 3.6 to 3.7 million women who gave birth in the United States between 1980 and 1989, approximately 1.0 to 1.2 million smoked during pregnancy.[3] The vast majority of women who give up smoking during pregnancy resume smoking after the birth of their baby.

Current smoking cessation programs for young parents (18 to 25 years) have shown little success; this age group is the only segment of the U.S. population that has not shown a decrease in the incidence of smoking.[1] Thus, a different approach to this important health problem must be developed.

The chief purpose of this paper is to point out and emphasize that pediatricians are in a strategic position to provide effective smoking cessation counseling to young mothers. The reasons for this are several, and will be provided subsequently.

One of us (WBW) has long been interested in the problem of smoking cessation in children and young parents. He has carried out epidemiologic studies of certain aspects of smoking and has incorporated in his office and hospital practice instructional programs directed against smoking. Because of his interest in important public health problems, we consulted Harris D. Riley Jr., M.D., Professor of Pediatrics at the Vanderbilt University Medical Center, Nashville, and shared with him the details of our program. The interview with Dr. Riley was taped and pertinent portions of it follow.

HDR: You have had a long-time interest in taking steps to help mothers to stop smoking during pregnancy and after the delivery of their child. Tell me more about what you have done in this regard. What is the prevalence of smoking in this as compared to other age groups? Do the members of this age group usually have their own physicians—an internist or family physician who provides smoking cessation advice?

WBW: Frequently women in the 18 to 25 years age group do not have their own physician in the usual sense. Recently, Katrina Gwinn, M.D., then a Vanderbilt medical student and an Amos Christie Scholar, and I carried out in my office a follow-up study of 150 smoking parents of patients of mine. The results showed, among other things, that 62%

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did not have a personal physician. Of the women in the child-bearing age group who are mothers, 30% were smokers. The study also showed that these patients rarely received smoking cessation advice from any source.

At this point, I should like to give some figures from a study of over 3,000 pregnant women in Oklahoma from 1988 to 1990.[4] In the Oklahoma study approximately one-third of women indicated that they smoked during the three months prior to pregnancy. By the last three months of pregnancy, the proportion decreased to 22%. However, the rate of resumption of smoking after delivery was high. Of the women who smoked before pregnancy, 90% resumed smoking after delivery. In my practice, 30% of mothers of our patients smoked during the last three months of pregnancy and 92% resumed smoking after delivery.

The same study cited above[4] revealed several other findings that agree with our experience in Nashville. The highest proportion of prepregnancy and prenatal smokers was among women aged 25 and under, while the lowest was among mothers aged 35 and over. Women who had not completed high school were seven times as likely and women with high school degrees four times as likely to smoke as women with college degrees. White women were twice as likely as black women to smoke before and during pregnancy. Unmarried women were nearly twice as likely as married women to smoke during the last three months of pregnancy. In summary, the results from the Oklahoma study agree with our findings, and provide confirmatory information that there is more smoking in the poor, the unmarried, and those who did not finish high school! This is the group that receives the least help from the medical profession, and the ones who need the most guidance!

HDR: Whom do the women, during pregnancy or after delivery, contact when they have health problems such as a sore throat or a respiratory infection?

WBW: They frequently contact their obstetrician or pediatrician. They do so because they know and trust them.

HDR: In an earlier publication,[5] you referred to the importance of the family in antismoking programs. In your opinion, who has the most influence on the children's behavior, the mother or the father?

WBW: I believe definitely that the mother does. However, smoking mothers are not setting a good example for their children. Epps and Manley[6] state that *each day more than 3,000 children* in the United States begin to use tobacco. Ninety percent of all adult smokers start smoking as teenagers. This is an impressive pediatric problem! Each year in the United States, more than 400,000 deaths are attributed to tobacco use.

HDR: Is expense a factor in your adolescents' and young mothers' smoking habits?

WBW: Not at the present time. The results from the study involving 150 patients in our office showed that expense is not in the top five reasons listed by them to stop smoking! About 30% (and increasing) of our patients are now Medicaid/TennCare recipients; 50% of the babies born in Tennessee in the next ten years will receive Medicaid/TennCare assistance. In our office, *a child's mother who is a Medicaid/TennCare recipient is four times as likely to be a smoker as those who are in a higher economic category.* High school dropouts are three times as likely to be smokers as those with college degrees.

HDR: You have referred to the study in your office by Dr. Gwinn and yourself. What was the number one reason mothers listed that had a major influence on their ending their smoking?

WBW: We found it impressive that concern for their infant's health was the leading reason that women terminated smoking; *43%* gave this as the most frequent reason! The fact that this was their main reason for stopping should not be surprising because protection of the fetus in utero is also the main reason that women stop or decrease their smoking during pregnancy. Concern about their own health was the reason given by 41%. Other reasons given were that they could not smoke at their jobs, it was not fashionable anymore, and occasionally their older children would tell them, "Smoking is a bad habit."

HDR: Various studies have shown that young mothers rarely consult physicians about their lifestyle problems, especially smoking. This is most likely due to their youth and the feeling that "they are not sick enough to consult a physician." What step cans be taken to counteract this?

WBW: Remember that most of these mothers know that nicotine is harmful to their babies; this is the reason that they have decreased their smoking during pregnancy and *not because they wanted to*; they did it for the fetus in utero! We believe that, after a mother delivers her infant (especially her first baby), is the optimum time to convince her to give up smoking.

I believe that the pediatrician has an excellent opportunity to influence the mother's smoking habit *at her first postpartum visit.* He can mention all the advantages of a smoke-free environment for her baby: fewer respiratory infections, less otitis media and asthma, and a reduced incidence of sudden infant death syndrome (SIDS). The mother can convincingly be told that she sets an excellent example for her child by not smoking.

HDR: Why do most mothers (92% in your practice) start smoking again with the birth of the baby?

WBW: These mothers restart because they are addicted to nicotine. This is another reason we need to start counseling these women while they are hospitalized. Show them videos about smoking cessation, involve the respiratory therapy team to talk with them, and give them pamphlets to take home to the family!

HDR: Why is it that this period is such a critical time in their life?

WBW: First of all, this is a point in her life that she probably has *reduced her smoking for several months* during her pregnancy. Secondly, she did this not for herself, *but for her baby.* At this point, the new baby is a great motivator. Thirdly, she is more receptive to recommendations; thus, now is an excellent time to educate her about the harmful effects of passive, or secondhand, smoke. Let her know in the hospital that passive smoking increases the chances of the baby having SIDS, and causes an increased incidence of otitis media, bronchitis, and asthma.[4,5] This is a receptive time in the mother's and the family's life for the dissemination of this information to both parents and grandparents, because *"they all want the best for their new baby!"*

HDR: Why do you believe that we have failed in the past to influence the smoking habits of the 18- to 25-year-old woman?

WBW: This is an interesting age group as far as medical care. In the past, most members have been considered "too old" for pediatric care. After the obstetrician delivers her baby, he frequently believes that he has done his job. The obstetrician may not see the mother again until the next pregnancy. Also, we must remember that the young mother has not developed any of the publicized long-term complications (heart attack, emphysema, cancer, etc.) of smoking; thus, she usually does not consult internists or family doctors about her smoking problem. These women tend to put it off because "they aren't sick." Freund and associates[7] in the Framingham study showed that women who smoked two packs a day were more than four times less likely to stop than women who smoked one pack of cigarettes a day and more than eight times less likely than men who smoked one pack a day.

Why should the pediatrician and the general practitioner (who has young children as patients) be the *main doctors* involved in smoking cessation activities? Here are some of the reasons.

1. They see young parents *more* often than any other physician group. After the birth of a baby, the young parents will be seen by their pediatrician about eight or nine times during the first year of their baby's life. These *frequent follow-up visits* provide an unparalleled opportunity to teach smoking cessation.

2. The pediatrician has a golden opportunity to discuss the parents smoking habits when the parents ask: "Why is my child always sick? He has otitis every month, he wheezes and coughs frequently." This is the time that you can show them articles about the dangers of passive smoke and all the problems it causes! At this point, many parents are ready for a change and say, "I want the best for my baby." A previous article[5] pointed out that our mothers rated their child's health as the main reason that they quit smoking (their own health ranked second).

3. A third advantage that the pediatrician has is that he is working daily with teenagers and young parents (usually mothers) who do not have a 30- or 40-year history of smoking, and he can practice input of preventive measures before these individuals develop lung cancer, heart attacks, and emphysema. We should be reminded again at this point that no measures in the past have greatly decreased the incidence of young mothers who smoke.

4. Immunizations, injury prevention, and other measures have always been an important component of pediatric practice; thus, action by the pediatrician to interrupt smoking habits in young mothers and their infants follows naturally.

5. With their many contacts with parents, pediatricians have an excellent opportunity to instill in them the concept that they must "teach by example" and serve as a role model for their children. Many parents need to be reminded that *their lifestyle* (smoking, overeating, too little exercise, violent and abusive behavior, excessive use of alcohol, etc.) have a major effect on their children. ❑

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An Overview of the American Cancer Society Screening Guidelines

JOAN HAMBLIN, M.D. and PAMELA D. CONNOR, Ph.D.

Introduction

Cancer is the second leading cause of death in the United States, and one person in four will be diagnosed with it.[1] It is estimated that in 1994, 237,039 women and 268,283 men will die from cancer. This paper presents the current American Cancer Society (ACS) screening guidelines for early detection and prevention of cancer (Table 1).

The ACS developed screening guidelines in 1980 to improve survival rates for asymptomatic patients.[2] An effective screening test must have high specificity (probability that the test or procedure results will be negative when the disease is not present) and sensitivity (probability that the test or procedure results will be positive when the disease is present), demonstrate cost-effectiveness, and reduce mortality. Patient survival rates usually increase when physicians and patients comply with screening guidelines, although false-positive results may cause anxiety in patients and false-negative tests may create unwarranted security.

The purpose of this paper is to present consolidated cancer screening recommendations for family physicians, with particular emphasis on incidence/prevalence, morbidity/mortality, risk factors, screening tests, basic costs, recommendations, and compliance rates with screening for breast, colorectal, cervical, lung, and prostate cancer.

Breast Cancer

Incidence/Prevalence. In 1994, an estimated 182,000 women will be diagnosed with breast cancer, and over 46,000 women will die from it.[1] Breast cancer is the leading contributor to premature cancer death in women. It accounts for 32% of all incident cancers.[1,3] Estimates of the lifetime risk for women developing breast cancer are 9.5 per 100 among whites and 6.9 per 100 among blacks (data for those born in 1980).[4] These racial differences in risk increase with age.[5]

Risk Factors. Risk factors for developing breast cancer include female sex, age, family history of premenopausal cancer,[6] breast cancer in first-degree relatives, previous breast cancer, alcohol consumption, first pregnancy after age 30,[6] menarche before age 12,[7] menopause after age 50,[6] obesity, high socioeconomic status,[8] and history of ovarian or endometrial cancer.[2,9] Risk is doubled if a mother or sister has breast cancer and is tripled if both a mother and sister have the disease.[10] Colditz and colleagues,[11] however, found that risk increased by only 2.5 times the normal rate if the mother or sister had a history of breast cancer. The strongest predictor is a woman's age.[12,13] Risk increases tenfold as a woman ages from 30 to 50, and 85% of breast cancer cases occur in women over age 50.[14] Three-fourths of all women who develop breast cancer have no significant risk factor other than age.

Screening Tests. Three screening tests are currently available for breast cancer: self-breast examination, clinical examination by a physician, and mammography. The ACS[2] and other organizations[15,16] encourage self-breast examination because it is simple and noninvasive, even though it is not sensitive. The Breast Cancer Detection Demonstration Project found that the sensitivity of self-breast examination was 26%.[9] The same studies found that the clinical examination was more sensitive, detecting 45% of cancers. Unfortunately, clinical trials of self-breast examination and clinical examination have never demonstrated a reduction in morbidity or mortality.[17,18] Both self-breast examination and clinical examination may pick up breast cancer, but at a later stage when treatment may not alter the course of disease (Fig. 1).

Mammography, unlike physical breast examination, can detect breast cancer early.[9,17,19,20] In a study comparing the diagnostic accuracy of mammography in patients who require breast bi-

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TABLE 1

SUMMARY OF AMERICAN CANCER SOCIETY RECOMMENDATIONS FOR THE EARLY DETECTION OF CANCER IN ASYMPTOMATIC PEOPLE

Test or Procedure	Sex	Age	Frequency
Sigmoidoscopy, preferably flexible	M&F	50+	Every 3 to 5 years
Fecal occult blood test	M&F	50+	Every year
Digital rectal examination	M&F	40+	Every year
Prostate examination*	M	50+	Every year
Pap test	F	All women who are, or who have been sexually active, or have reached age 18, should have an annual Pap test and pelvic examination. After a woman has had three or more consecutive, satisfactory, normal, annual examination, the Pap test may be performed less frequently at the discretion of her physician	
Pelvic examination	F	18 to 40 40+	Every 1 to 3 years with Pap test Every year
Endometrial tissue sample	F	At menopause, if at high risk†	At menopause and thereafter at the discretion of the physician
Breast self-examination	F	20+	Every month
Breast clinical examination	F	20 to 40 40+	Every 3 years Every year
Mammography‡	F	40 to 49 50+	Every 3 years Every year
Health counseling and cancer checkup§	M&F	20+ 40+	Every 3 years Every year

*Annual digital rectal examination and PSA test should be performed on men 50 years of age or older. If either test is abnormal, further evaluation should be considered.

†History of infertility, obesity, failure to ovulate, abnormal uterine bleeding, or unopposed estrogen or tamoxifen therapy.

‡Screening mammography should begin by age 40.

§To include examination for cancers of the thyroid, testicles, ovaries, lymph nodes, oral region, and skin.

Adapted with permission from Mettlin C, et al.[34]

opsy, mammography had a sensitivity of 79% and a specificity of 76%.[21] In 1963, the Health Insurance Plan followed 62,000 women who were divided into two groups, one screened with mammography and one without it.[19,22] The mortality rate of the screened women who were over age 50 at the time of the study was 50% lower than the nonscreened group at five years. Similar studies in Sweden[17] and the Netherlands[18] have shown not only that screening mammography is highly sensitive and specific but, more importantly, that it also reduces morbidity and mortality. Mammography, however, still fails to detect 10% of all palpable breast cancers.[9,23]

Mammography is a good example of how disease prevalence determines the benefits of a test. The prevalence of breast cancer in women less than age 40 is very small. Screening mammography in this age group has a low positive predictive value and can lead to many negative or normal breast biopsies. Furthermore, mammography in this age group has not demonstrated reduction in breast cancer mortality.[14,24] Screening mammography in postmenopausal women, on the other hand, has a significantly higher positive predictive value, because the prevalence of breast cancer in this group is more than ten times greater than it is in premenopausal women. Davis and Love[14] reported a 30% reduction in mortality for women 50 years and older who were screened annually or semiannually.

Cost. Cost is a major deterrent to screening mammography because it is expensive ($50 to $200).[25-27] Whether patient and physician compliance would increase if costs decreased is unknown. In the future, costs for each false-positive mammogram may be $500 to $1500 more. Emotional morbidity is another hidden cost of overly aggressive screening in a low prevalence population. Not all centers where mammography is performed are accredited; physicians can call their local ACS office for a list of accredited mammography centers.

Recommendations. Professional groups disagree about recommendations for breast cancer screening.[28-32] Specific disagreements involve the efficacy of self-breast examination, the use of mammography in women between the ages of 40 and 49, and the frequency of screening mammography. Tabar and colleagues[17] reported that mammography screening once every two years was as effective as annual screening. The National Cancer Institute (NCI) contends that evidence from controlled trials supports annual mammograms only for women between the ages of 50 and 69 years.[33] The ACS interprets the study differently, however, recommending a mammogram once every three years for women between the ages of 40 and 49 and an annual mammogram for women over the age of 50 (Table 1).[2,34] The ACS no longer recommends baseline mammograms for women between the ages of 35 and 40. The ACS also recommends monthly self-breast examinations in all women over the age of 20, a clinical examination once every three years for women between the ages of 20 and 40, and annual clinical examinations for women over age 40.

Compliance. The ACS survey of public awareness of cancer screening guidelines in 1987 found that 23% of women performed self-breast examinations monthly, 67% had a clinical examination every one to three years, 26% over the age of 40 had a mammogram annually, and 40% had a mammogram every one to three years.[35] A survey of physicians in 1989 found that more physicians were following ACS cancer screening guidelines in 1989 than in 1984, and 72% agreed with the guidelines for mammography, compared with 41% in 1984.[36] Almost 100% of physicians advised self-breast examination, and over 90% provided their patients with instructions.

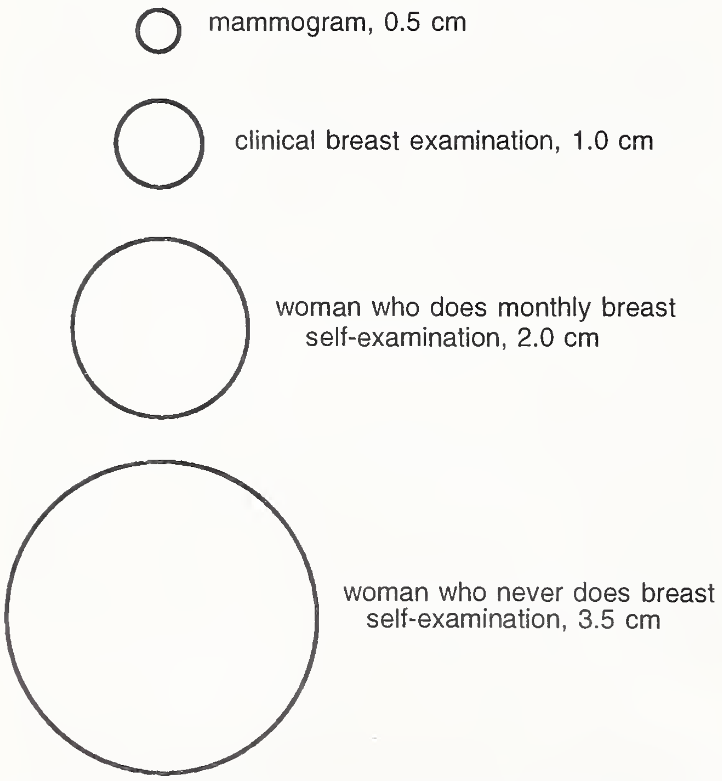
mammogram, 0.5 cm
clinical breast examination, 1.0 cm
woman who does monthly breast self-examination, 2.0 cm
woman who never does breast self-examination, 3.5 cm

Figure 1. Average size lumps found by a mammogram, clinical breast examination, and a self-breast examination (from Hortobagyi et al[86]).

Colorectal Cancer

Incidence/Prevalence. Physicians frequently see patients with colorectal cancer, with 149,000 new cases and over 56,000 deaths predicted for 1994.[1] The disease affects one in 20 Americans with an average five-year survival rate of 50%.[37]

Risk Factors. Risk factors include family history of colorectal cancer, familial polyposis coli, personal history of endometrial, ovarian, or breast cancer, long-standing ulcerative, adenomatous polyps, or previous colorectal cancer, smoking,[38] and age.[2,37,39] Risk increases sharply after age 40, with 90% of cancers occurring in persons 50 years old or older.[37] Relatives of patients with colorectal cancer have an average increased risk of two to three times for developing bowel neoplasia, although the risk is much higher in some families.[40] There is substantial evidence that most, if not all, cancers arise from preexisting adenomas or neoplastic polyps.[2,41,42] Animal fat is the most important dietary risk factor, but it is trivial compared to the risk defined by family history of an adenomatous polyp.[43]

Screening Tests. Screening for colorectal cancer includes digital rectal examination, fecal occult blood testing, and sigmoidoscopy. Digital rectal examination is safe and relatively inexpensive, but sensitivity is very low. The examining finger is usually 7 to 8 cm long, but the rectum is generally 11 cm, so less than 10% of all colorectal cancers are picked up by digital rectal examinations.[37]

Fecal occult blood testing also has a low sensitivity. The false-negative rate can be as high as 30%, because colorectal cancers may either not bleed or else bleed intermittently.[2,44,45] The test also has a high false-positive rate.[46,47] In as many as 85% of false-positives, foods containing hemoglobin or myoglobin (e.g., red meat), vegetables with peroxidase-like activity (e.g., fruits, turnips, horseradish, tomatoes), drugs (e.g., aspirin), or noncancerous lesions can make the test positive.[44,48] Mandel and colleagues,[49] however, provided conclusive evidence that fecal occult blood testing reduced mortality in 33% of patients who were screened annually.

Routine sigmoidoscopic screening is still controversial, because it misses right-sided lesions and is unable to reach approximately 40% of colorectal tumors. Several randomized and controlled studies in the United States[47] and Great Britain[40] are trying to determine if sigmoidoscopy can reduce colorectal cancer morbidity and mortality. Ransohoff and Lang[50] reviewed two landmark studies that demonstrated a 60% to 70% reduction in mortality with screening sigmoidoscopy. Sigmoidoscopy has a high sensitivity for early cancer detection and precursor adenomas. Sigmoidoscopy alone, however, is not recommended for symptomatic patients or those with a positive fecal occult blood test who need a complete examination of the gastrointestinal tract.[51]

Cost. Charges for screening for colorectal cancer vary widely ($15 to $18 for a series of three fecal occult blood tests; $88 to $210 for flexible sigmoidoscopy; and $243 to $287 for flexible sigmoidoscopy with biopsy).[27]

Recommendations. Policy-making organizations in North America and Europe differ in their guidelines for screening because of the unproven ability of screening tests to detect all colorectal cancers and to change the course of the disease in patients identified through the screening process.[2,15,52-54] For 1993, the ACS recommends an annual digital rectal examination in all individuals over age 40 (Table 1).[34] Annual fecal occult blood testing should begin at the age of 50, and sigmoidoscopy should be performed every three to five years for people over age 50.

Compliance. The ACS survey of physicians in 1984 found that only 18% followed guidelines for sigmoidoscopy, and less than half followed guidelines for fecal occult blood testing.[36] The follow-up survey in 1989 reported that 23% of physicians were following guidelines for sigmoidoscopy and 56% for fecal occult blood tests. Physicians reported performing sigmoidoscopy in 18% to 23% of patients and fecal occult blood tests in 90% of patients.

The ACS survey of public awareness in 1987 reported that 28% of men over age 50 had a fecal occult blood test every one to three years, compared to 23% who had a sigmoidoscopy.[35] Thirty-seven percent of men over age 40 had a digital rectal examination every one to three years, and 26% had the examination annually.

Cervical Cancer

Incidence/Prevalence. Over 15,000 new cases of cervical cancer and 46,000 cases of carcinoma in situ are estimated for 1994.[1] Like many cancers, the five-year survival rate for local disease is about 90%; the survival rate for advanced disease is considerably lower (53%).[1] The incidence of invasive cervical cancer has decreased significantly over the last 40 years, largely because of organized early detection programs.

Risk Factors. Risks for cervical cancer include vaginal intercourse, multiple partners, first intercourse at an early age,[55] advanced age,[56] and history of sexually transmitted disease.[2,55] Cervical cancer is associated with human papilloma virus (HPV), which is sexually transmitted. Any woman who has had vaginal intercourse is at risk for this disease. Hispanic, black, and American Indian women have twice the risk for cervical cancer as white women.[4] Tobacco use is another risk factor.[2,55,57] Risk for cervical cancer is doubled in women smoking 40 or more cigarettes per day.[58] Women who have had complete hysterectomies for benign conditions have no risk for cervical cancer.[59]

Screening Tests. The best screening method for cervical cancer is the Papanicolaou (Pap) smear. Evidence suggests that Pap tests with treatment of precervical intraepithelial neoplasia can lower mortality from cervical cancer.[60] Effectiveness can be improved by extending testing to women who are not currently being screened and by improving the accuracy of Pap smears, rather than by increasing the frequency of testing.[61]

Elderly women or women who have had complete hysterectomies do not appear to benefit from Pap testing if repeated cervical smears have been consistently normal. Unlike breast cancer, incidence of cervical cancer after age 65 is low, but older women are less likely to have been previously screened. Fifteen percent of women age 65 to 74 and 38% of women older than 75 have never had a Pap smear.[62] Other studies suggest that women at the greatest risk for cervical cancer (i.e., black, poor, uninsured, and living in rural areas) are least likely to have access to testing.[2,63-65]

Cost. The cost to the laboratory for a Pap smear is approximately $3. The cost to the patient is considerably higher, however, when the institution and physician fees are included. The total charge for a Pap smear (including any physician or clinic fees) averages $76, ranging from $34 to $100.[27,66]

Recommendations. The ACS revised the guidelines in 1987 to an annual Pap test for all women who are or have been sexually active or who have reached age 18 (Table 1).[34] After a woman has had three or more consecutive, normal, annual examinations, the Pap test may be performed less frequently at the discretion of the physician.

Compliance. A 1984 ACS survey of physicians reported that 90% of the primary care physicians performed Pap tests for asymptomatic patients.[36] Seventy-five percent continued to perform Pap smears on patients with three prior normal examinations. According to the ACS physician survey in 1989, compliance with the new guidelines for screening cervical cancer increased from 56% in 1984 to 70% in 1989. The 1987 survey of public awareness reported that 56% of the women had a Pap test annually and that 72% had a test every one to three years.[35]

Lung Cancer

Incidence/Prevalence. Lung cancer is estimated to be the leading cause of cancer-related deaths in 1994.[1] The ACS predicts that 172,000 people will be diagnosed and over 153,000 will die from lung cancer in 1994.[1] This disease is responsible for nearly 6% of all deaths in the United States.[67] Incidence increases with age, reaching a peak annual incidence of 329.9 cases per 100,000 in men and women age 70 to 74.[68] The five-year survival rate for local disease is 47% for whites and 42% for blacks; the survival rate for advanced disease is much lower, with 14% for whites and 11% for blacks.[1]

Risk Factors. The most significant risk factor for lung cancer is tobacco smoke. Tobacco alone is responsible for over 83% of all lung cancers.[69] Over 60% of adult smokers begin smoking before 15 years of age.[70] Adolescent girls comprise the fastest growing group of smokers in the United States.[71] Passive exposure to tobacco smoke also increases risk for lung cancer.[72] The children of parents who smoke have increased frequency of respiratory infections.[73] Nonsmokers married to smokers have increased risk of lung cancer.[74] Smoking also increases the risk for other cancers (e.g., colorectal, cervical, head, neck, and bladder).

Screening Tests. The two screening tests most frequently considered for lung cancer are chest x-ray and sputum cytology. Chest x-ray is neither a sensitive nor specific screening test for lung cancer, with an estimated false-positive rate of 0 to 10%.[68] In the NCI Cooperative Lung Cancer Detection Program, 30,000 asymptomatic smokers, age 45 and older with a history of chronic cigarette smoking, were followed for an average of five years and were offered chest x-ray and sputum cytology every four months.[67] Chest x-ray missed 33% of the diagnoses for those in a high-risk group for lung cancer. Sputum cytology was even less sensitive, missing over 58% of the cancers. In the NCI program, neither test reduced lung cancer mortality or morbidity.[75-77]

Cost. The cost for chest x-ray and sputum cytology varies. The *1993 Physician Fee and Coding Guide* presents costs ranging from $66 to $78 for chest x-ray (standard 2-view) and $23 to $29 for sputum cytology.[27]

Recommendations. The ACS,[2] the NCI,[15] and the U.S. Preventive Services Task Force[16] do not recommend chest x-ray or sputum cytology for routine screening for lung cancer. All three groups support primary prevention, specifically, smoking cessation.

Compliance. In the 1989 ACS survey of physicians, nearly all advised against smoking; 96% gave this advice to all patients who smoked.[36] Three out of four physicians gave their patients educational materials, and 79% counseled smokers to help them to quit. Seven in ten also recommended smoking cessation clinics and programs. Primary prevention is the key to long-term reduction of lung cancer. Prevention of smoking behavior needs to be targeted at the pediatric population, since the average smoker begins smoking before the age of 15.[70]

Prostate Cancer

Incidence/Prevalence. Prostate cancer will be diagnosed in over 200,000 men in 1994, an increase of 21% from 1993.[1] An estimated 38,000 men will die from prostate cancer in 1994.[1] This disease is the most commonly diagnosed cancer in men. Incidence doubles and mortality triples in black men.[78] The age-adjusted prostate cancer death rate is 23.7 per 100,000 for all races, compared with 46.8 for blacks alone.[3]

Risk Factors. The primary risk factor is age. The National Cancer Data Base of the American College of Surgeons' Commission on Cancer revealed that in 1990 the mean and median age of diagnosis for 23,183 patients was 72.3 years.[79] In 1990, only 7.1% of patients were diagnosed at an age younger than 60. Steinberg and colleagues[80] also identified family history as a significant risk factor. Men with a first-degree relative with prostate cancer were twice as likely to develop prostate cancer as men without a familial risk factor.

Screening Tests. The digital rectal examination, the transrectal ultrasound, and serum tumor markers are possible screening tests for prostate cancer.[34] Digital rectal examination has limited sensitivity, since the examining finger can palpate only the posterior and lateral aspects of the prostate. Stage A tumors are nonpalpable. The sensitivity of a digital rectal examination is estimated at 70% in men with obstructive bladder symptoms but only 33% in asymptomatic patients.[16] Digital rectal examination also has limited specificity. A study involving symptomatic men showed that suspicious findings on digital rectal examination correlated with only 33% of histologic evidence of prostate cancer.[81]

Transrectal ultrasound has changed dramatically since its introduction in 1971. In asymptomatic men, transrectal ultrasound has detected early prostate cancer (nonpalpable tumors).[82] The sensitivity, however, of transrectal ultrasound is 36% to 85%; specificity is 41% to 79%, with a low detection rate of 2.6%.

The ACS now includes prostate-specific antigen (PSA) testing in the guidelines for screening for prostate cancer.[34] The PSA test, which began evaluation in 1984, has become the most common diagnostic laboratory study done in men with prostate cancer.[79] Much enthusiasm has developed to perform this test annually on all asymptomatic men over the age of 50.[82] The ACS recommends screening to begin at 40 years of age in men at high risk.[34] None of these screening tests, however, has been shown to be effective in reducing prostate cancer mortality and morbidity.[83] In many cases, men with prostate cancer will not manifest any symptoms during their lifetime, even though autopsies would indicate that prostate cancer is present in nearly half of older men. Less than one out of every 380 men with documented prostate cancer actually dies from the disease.[81]

Cost. A combination of digital rectal examination and the PSA test will result in a more cost-effective method for early detection of prostate cancer, reserving the transrectal ultrasound for those men who have had abnormal findings in one or both of the tests.[81,82] Individual test costs vary: digital rectal examination, $10 to $50; PSA, $10 to $50.[84] In the *1993 Physician Fee and Coding Guide*, transrectal ultrasound was listed at between $363 and $448.[27]

Recommendations. The ACS (Table 1)[34] and the American Geriatric Society[68] recommend an annual digital rectal examination and PSA test in all men over age 40. The U.S. Preventive Services Task Force,[16] however, does not recommend a routine digital rectal examination or PSA test in the screening for prostate cancer, because neither test has led to significant improvement in life expectancy.[85]

Compliance. Compliance with digital rectal examination is high, given its simplicity and low cost. Transrectal ultrasound is expensive and not widely used. Compliance with PSA testing is difficult to establish because the guidelines for its use are still new.

Conclusion

The 1989 ACS survey of physicians reported that 60% believed the ACS guidelines in general were very helpful, because they helped physicians to obtain patient confidence and cooperation.[36] Eighty-six percent agreed completely with the guidelines for digital rectal examinations; 88% with fecal occult blood testing; 64% with sigmoidoscopy; 72% with mammography; and 70% with Pap tests. The most controversial tests were sigmoidoscopy, Pap smear, and mammography. Eighty-six percent were distributing educational materials on early detection and prevention, reacting to an increase in patient interest concerning screening guidelines. The public is increasingly aware of the availability of cancer screening tests. More work can be done to educate patients about their appropriate use and frequency.

Family physicians are in a unique position to offer early detection and primary prevention through routine cancer screening. The physician can promote cancer screening, implement programs to educate patients, and continue to offer cost-effective screening tests.

The topic of cancer screening is dynamic; new treatment protocols and screening tests are offered yearly. The ACS first established cancer screening guidelines in 1980.[2] They have continued to reevaluate, revise, and update these guidelines. Economic barriers and an increasing elderly population will force new developments in the guidelines. Ongoing studies will continue to respond to many of the unanswered questions surrounding cancer screening and to resolve the disagreements concerning specific tests and frequency. In the past few years, however, major changes in screening guidelines have addressed cost-effectiveness and early detection techniques. These changes include PSA testing for prostate cancer, the frequency of mammograms for breast cancer, annual Pap tests for cervical cancer, flexible sigmoidoscopy for colorectal cancer, and primary prevention efforts for lung cancer. The ACS strongly recommends continued research to develop effective screening tests, public education on risks and screening techniques, and comprehensive and appropriate screening guidelines for early cancer detection by primary care physicians. ❑

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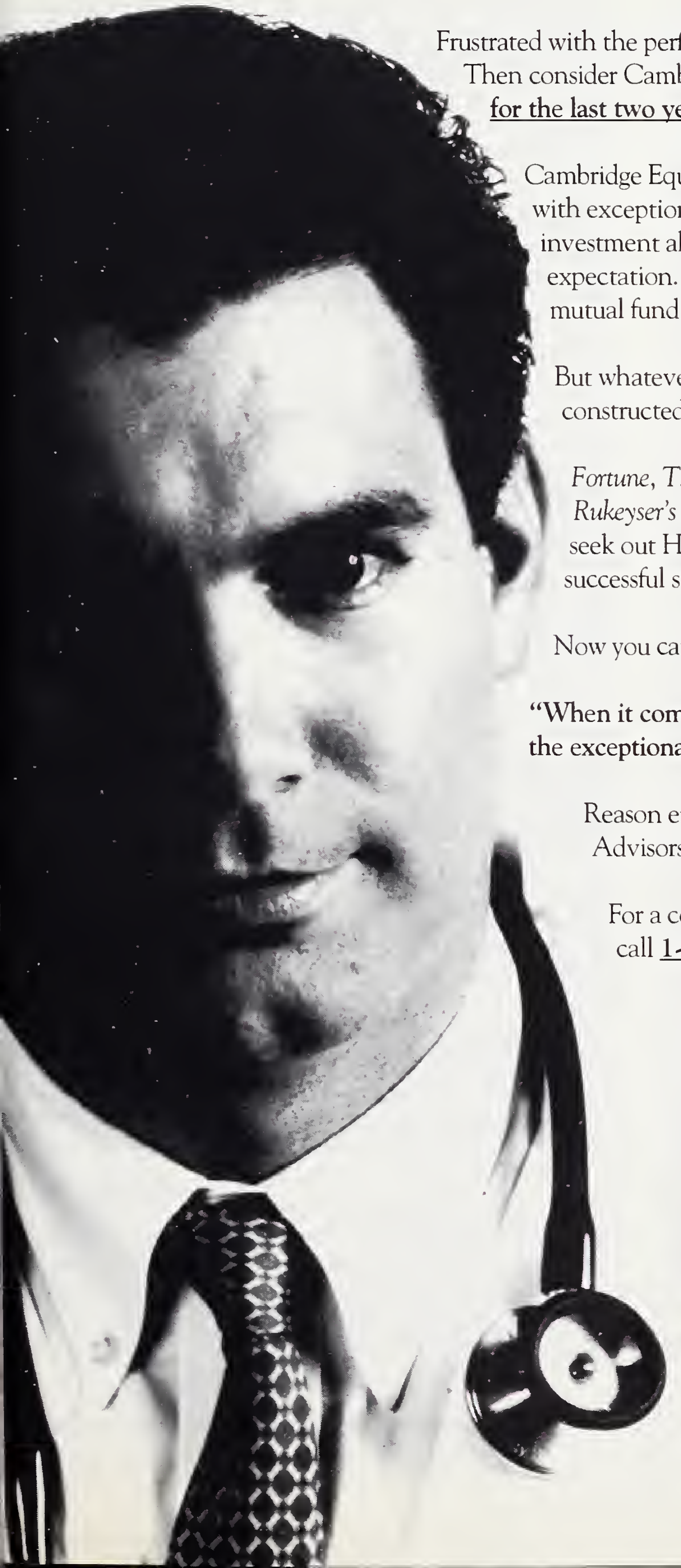

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Confusion and Weakness Following Coronary Artery Bypass Graft

Case Report

A 68-year-old man was readmitted six days after coronary artery bypass surgery because of acute confusion, weakness, and chest pain. The patient had had documented coronary artery disease since 1984 with two prior myocardial infarctions. Six days prior to admission, he underwent four-vessel bypass surgery. His postoperative course was uncomplicated. He was discharged home on the day prior to readmission.

On the morning of admission, while eating breakfast, he noted the abrupt onset of substernal and epigastric pain, rated four on a scale of ten; he denied pain radiation, shortness of breath, nausea, or vomiting. Shortly thereafter he became confused, disoriented, and weak, unable to sit upright in his chair. There was no relief of pain with two sublingual nitroglycerin tablets. He was transported to the hospital via ambulance. En route, he received one nitroglycerine spray, which caused his systolic blood pressure to fall to 90 mm Hg.

His past history is notable for chronic atrial fibrillation treated with warfarin, rectal carcinoma diagnosed in 1986 for which he received radiation therapy, transurethral prostate resection in 1985, and coronary artery disease as noted above. On admission he was taking warfarin 5 mg daily and codeine 30 mg every four hours as needed. There were no known drug allergies. He is a retired bank executive, married, with two children. He stopped smoking cigarettes in 1981. He consumes one glass of wine four times a week.

On physical examination, he was alert and pleasant, but had memory deficits and was not fully oriented. His temperature was 98.7°F, blood pressure 111/74 mm Hg, pulse 78/min and irregular, and respiratory rate 16/min. Examination of the head, eyes, and oropharynx was normal. The neck was supple, with normal jugular venous pressure. There were faint left basilar crackles, but no wheezes or rhonchi. The heart rhythm was irregularly irregular; S1 and S2 were normal, but there was no S3 or murmur heard. The abdomen was soft, nondistended, and nontender; the bowel sounds were normal. There was no guarding or rebound tenderness, and no organs were palpable. There was no blood in the stool. There was no edema or cyanosis. The saphenous vein graft site was clean, without pus or erythema. Homans' sign was absent bilaterally. The patient was confused about recent events, but the neurologic examination was otherwise normal.

The electrolytes were normal; the hematocrit was 27%, slightly increased from his postoperative hematocrit five days earlier. The WBC count was 8,000/cu mm, with 77% neutrophils, 7% lymphocytes, 8% monocytes, and 6% eosinophils. The platelet count, creatinine, blood urea nitrogen, and glucose were all normal. The albumin was 3.4 gm/dl and the total protein was 5.6 mg/dl; the remainder of the chemistry panel was within normal limits. The international normalized ratio (INR) was 2.0 and the partial thromboplastin time was 30 seconds. The urinalysis was unremarkable.

The electrocardiogram revealed atrial fibrillation, with a ventricular response of 81/min, and was otherwise normal. The chest radiograph revealed mild pulmonary venous congestion and a left pleural effusion, unchanged from previous examinations. Surgical clips and wires were in good position.

The patient was admitted to the hospital, where echocardiography revealed normal ventricular function, no significant valvular disease, and no pericardial effusion. Lower extremity duplex Doppler was unremarkable. The patient had repeated episodes of orthostatic hypotension; he remained disoriented and had no recollection of his recent bypass surgery. Computerized tomography of the head and thyroid function tests were all normal.

He was treated with intravenous fluids and oxygen, and warfarin therapy was continued. On the third hospital day, his temperature rose to 101.5°F and his systolic blood pressure fell to 80 mm Hg. Blood and urine cultures were obtained. A pulmonary artery catheter, arterial line, and left chest tube were placed. The pleural fluid was transudative.

On the fourth hospital day, the serum sodium level was 127 mEq/L, and the serum potassium remained normal. The serum cortisol was undetectable; one hour following cosyntropin stimulation, serum cortisol was still absent. CT of the abdomen revealed bilateral adrenal masses, new since the scan prior to surgery, most consistent with hemorrhage.

The patient was treated with intravenous hydrocortisone and promptly became oriented, afebrile, and normotensive. His hydrocortisone dose was slowly decreased, and he was eventually discharged taking 20 mg every morning and 10 mg every evening.

Discussion

Acute adrenal insufficiency due to bilateral hemorrhage is a rare but previously described complication of anticoagulation, operations, or major systemic illness.[1] The diagnosis is often difficult due to the nonspecific signs, including fever, hypotension, confusion, and electrolyte disturbance.

One of the first reports of adrenal insufficiency following coronary artery bypass (CAB) surgery was from this hospital in 1979.[2] Five out of 5,000 patients had acute adrenal insufficiency at an average of ten days following CAB surgery. Acute hemorrhage was felt to be the cause, although CT scanning was not available at that time to verify the diagnosis.

Since then there have been several case reports of acute adrenal hemorrhage, although most did not follow CAB surgery.[3] These 19 cases were recently summarized; 12 occurred following various unrelated surgeries, four occurred on anticoagulation (although the level of anticoagulation was therapeutic), and two occurred with pneumonia. The clinical manifestations were protean and included fever, hypotension, chest pain, abdominal pain, nausea, vomiting, leukocytosis, and hyponatremia. The diagnosis was made by cosyntropin-stimulation testing. Hemorrhage was con-

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Presented by Rufus Davis, M.D., chief medical resident, St. Thomas Hospital, Nashville.

firmed by abdominal CT scanning.

Once the diagnosis of adrenal insufficiency is suspected, steroid replacement therapy should begin promptly; recovery is usually dramatic.[4] Many patients will have resolution of adrenal masses on CT scan within six months, but most will require lifelong steroid replacement.

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Progressive Dyspnea and Weight Loss

Case Report

A 68-year-old woman presented herself with a history of increasing dyspnea over three to four weeks. She initially noted mild dyspnea on exertion, but gradually she became unable to carry out any of her usual activities such as cooking or bathing. She had a history of mild obstructive lung disease. Bronchodilators by inhalation were initially prescribed without improvement in her symptoms. She noted decreased appetite, a significant weight loss, and malaise. She denied fever, chills, chest pain, orthopnea, platypnea, and edema. Her past medical history included mild lung disease from a past smoking history, and degenerative joint disease. She had undergone a laparoscopic cholecystectomy in 1992 and a laparotomy for a diverticular abscess in 1982.

On examination, she appeared well and in no distress. She was afebrile, with a pulse of 88/min and blood pressure of 122/70 mm Hg. The thyroid was normal. The jugular veins were not distended. The heart did not seem to be enlarged, and the rhythm, rate, and first and second heart sounds were normal; a diastolic rumble was heard at the left lower sternal border. The lungs were clear, and the abdomen was normal. There was no edema. Pelvic and rectal examinations were normal, and the stool was negative for blood.

When a transthoracic echocardiogram revealed a mass in the right atrium, she was referred to St. Thomas Hospital, where on transesophageal echocardiogram an irregular, mobile mass of "speckled" echodensity was found in the right atrium, arising from the area of the fossa ovalis; it partially occluded the tricuspid orifice, and measured 3.9 × 3.5 cm. Myocardial function appeared normal, and left heart catheterization and coronary angiography revealed normal coronary arteries. A diagonal branch of the left-anterior descending coronary artery and a continuation branch of the right coronary artery both gave off vessels that supplied the right atrial mass, which was surprisingly so vascular that there was concern that it might be angiosarcoma.

The mass was successfully resected with tumor-free margins. Pathologic examination of the surgical specimen demonstrated it to be an atrial myxoma with unusually prominent vascularity and extramedullary hematopoiesis.

There were no postoperative complications, and the patient was discharged without dyspnea or other handicaps.

Discussion

Atrial myxomas comprise up to 50% of all primary cardiac tumors. Only 15% of myxomas occur in the right atrium. Myxomas cause no specific clinical abnormalities. They may be associated with fever, weight loss, malaise, clubbing, and emboli, both systemic and pulmonary. Right atrial myxomas can produce right heart failure, leading to elevated jugular venous pressure, peripheral edema, and hepatomegaly. Laboratory abnormalities include prolonged erythrocyte sedimentation rate, anemia, and leukocytosis.[1]

The differential diagnosis of right atrial myxomas includes pulmonary emboli, atrial septal defect, pulmonary hypertension, constrictive pericarditis, and Ebstein's anomaly. Isolated tricuspid valve disease is rare. The murmur of tricuspid regurgitation heard in an otherwise normal heart should raise the question of right atrial myxoma.[1]

Myxomas may occur in a familial, autosomal dominant pattern, usually associated with the "syndrome myxoma." These patients tend to be younger and often have pigmented cutaneous lesions. Associated endocrine abnormalities include adrenal cortical disease (sometimes with Cushing's syndrome) and pituitary adenomas.[2]

Histologically, myxomas appear similar to organized thrombus, leading some to postulate that myxomas are reactive tissue, perhaps secondary to a traumatic insult.[3] However, most authors now agree that myxomas are neoplastic, but the cell of origin has yet to be determined. The systemic symptoms common in myxoma could be explained by a neuroendocrine cell type.[4]

Prior to the era of echocardiography, atrial myxoma was usually a serendipitous diagnosis made at cardiac catheterization, or at autopsy. Today echocardiography (specifically transeophageal) is the diagnostic procedure of choice. In fact most authors believe catheterization prior to surgical resection is unnecessary, provided the echocardiogram is not technically difficult.[5] Computed tomography and magnetic resonance imaging are generally considered equal to echo-

(Continued on page 21)

Presented by Edward Arrowsmith, M.D., medical resident, Vanderbilt University Medical Center, and Rufus Davis, M.D., chief medical resident, St. Thomas Hospital, Nashville.

Trauma Rounds

Tension-Free Repair of Giant Ventral Hernias

LINDA M. PATE, M.D.; JAMES E. WHITE, M.D.;
LEWIS B. SOMBERG, M.D.; and DONALD E. BARKER, M.D.

Introduction

The incidence of ventral hernias requiring herniorrhaphy following celiotomies is reported up to 10% with recurrence after primary repair being as high as 30% to 40%.[1,2] Giant ventral hernias with fascial defects >200 sq cm pose an even greater problem, because of the technical difficulties that are encountered by surgeons who attempt their repair. Primary closure alone is often not practical in the case of giant ventral hernias because the fascia is under too much tension. The incidence of recurrence is very high and there is often the loss of "right of domain" within the abdominal cavity. One technique that has been used in the past for ventral hernia repair is tension-free primary closure with or without mesh reinforcement. In trauma patients the omentum is sometimes unavailable, but utilization of mesh directly covering unprotected bowel can lead to intestinal fistulization and perforation.[3,4] Relaxing incisions through some of the abdominal wall components has allowed tension-free primary closure of midline fascial defects, although there remains the potential for hernia formation through the relaxing incisions.

This case illustrates our use of polypropylene mesh panels as reinforcement for the parasagittal relaxing incisions made for repair of a giant ventral hernia.

Case Report

A 54-year-old white man was admitted to our level I Trauma Center for evaluation of injuries sustained in a motor vehicle collision. The patient arrived alert and oriented with stable vital signs. His abdomen was diffusely tender with voluntary guarding. Exploratory celiotomy revealed a large fracture to the right lobe of the liver that extended through the gallbladder fossa, with rupture of the gallbladder. A cholecystectomy and hepatorrhaphy were done, with extensive omental packing, and the patient's postoperative course was complicated by cardiac contusion, multiple bilateral rib fractures, thrombocytopenia, and bilateral pleural effusions. During the lengthy postoperative course the patient developed a subhepatic collection of bile that was drained percutaneously using CT guidance. By postoperative day 14, the patient had developed a fascial wound dehiscence with giant ventral hernia formation. Due to his overall condition, surgical intervention would have carried an unacceptable risk of mortality, and he was discharged home, with ventral hernia repair planned for a later date.

Upon exploratory celiotomy during the repair of his ventral fascial defect, the fascia was found to be separated from the subcutaneous tissue layers and retracted approximately 6 cm from the midline bilaterally, resulting in a fascial defect measuring 264 sq cm. Tension-free approximation of the fascia in the midline was not possible due to the loss of right of domain within the peritoneal cavity.[4] Mesh was not placed over the midline defect, as is often done, considering that the patient had no omentum covering his intestine because of the extensive omental pack used in his initial operation. Therefore, relaxing incisions were made.

The external oblique aponeurosis and the anterior leaf of the internal oblique were incised at a point midway between the lateral edge of the rectus muscle and medial edge of the external oblique muscle on both sides (Fig. 1).[5] Thus the relaxing incisions enabled the linea alba to be closed primarily in the midline with No. 1 PDS interrupted sutures, and the polypropylene mesh was then fashioned to fit in the side panel relaxing incisions for reinforcement. The mesh was secured with 2-0 PDS continuous sutures by suturing the mesh to the edges of the relaxing incisions (Fig. 2).[5] Closed suction subcutaneous drains were placed and the skin of the midline abdominal incision was closed in the standard fashion. The patient did well, and was discharged home on postoperative day 7. The patient's midline incision remains intact, with no evidence of recurrence two months postoperatively.

Discussion

Omental covering of the bowel is often limited following emergency celiotomy on trauma patients with extensive abdominal injuries, because the omentum has

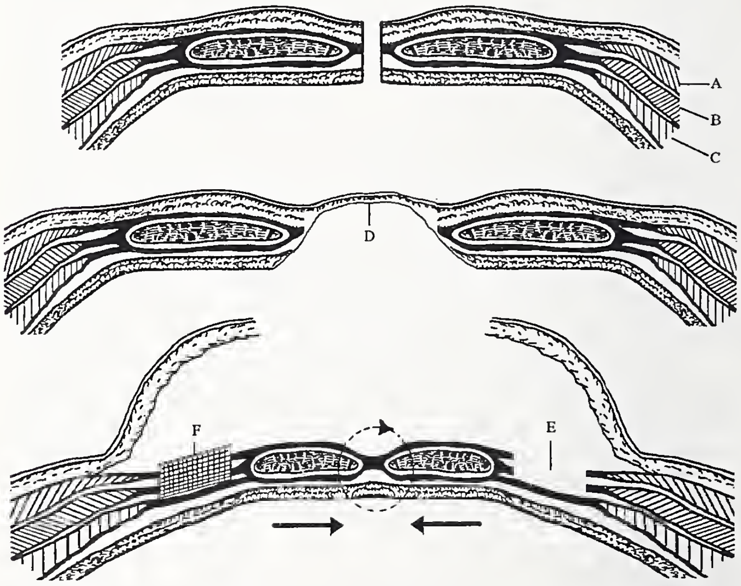

Figure 1. Cross-sectional view of abdominal wall components: (A) external oblique muscle, (B) internal oblique muscle, (C) transversus muscle, (D) midline fascial defect with skin intact, (E) relaxing incision through the external and internal oblique aponeurosis, (F) placement of polypropylene mesh panels as reinforcement of parasagittal relaxing incision. Arrows + circle indicate tension-free primary closure of the fascia in the midline.

From the Department of Surgery, University of Tennessee College of Medicine, Chattanooga Unit.

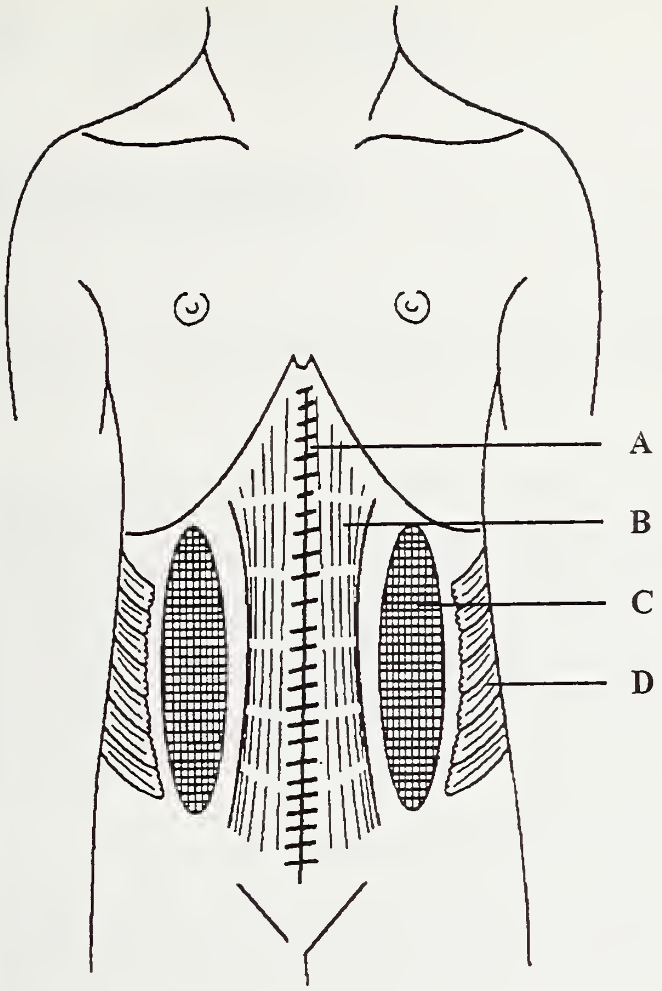

Figure 2. Schematic design of primary midline fascial closure: (A) primary closure of midline fascia with No. 1 PDS interrupted sutures, (B) rectus abdominis muscle, (C) polypropylene mesh reinforcement panels of parasagittal relaxing incisions, (D) external oblique muscle.

been used earlier for its hemostatic and protective properties. Placement of polypropylene mesh over unprotected bowel can lead to intestinal fistulization, erosion, and perforation. The use of relaxing incisions through the external and internal oblique aponeurosis lateral to the rectus abdominis muscles, with placement of polypropylene mesh reinforcement panels, allows tension-free primary closure of giant ventral hernias in the midline when such omental covering is not available.

In this patient, the use of mesh was not practical because of the lack of an omental covering for the bowel. In attempts to avoid placing mesh directly on unprotected bowel, "remote myocutaneous flaps or free tissue transfers" were often used for closure of giant ventral hernias.[6] More recently, plastic surgeons have reported using relaxing incisions for repair of large ventral hernias.[3,6] The use of polypropylene mesh side panels secured into the lateral relaxing incisions as described above, however, is a fairly new technique. It is not technically difficult, and provides an excellent tension-free primary midline fascial closure. When making the relaxing incisions, it is important to be careful to avoid incising the neurovascular bundles that supply the rectus muscle, since they lie between the internal oblique and transversus muscles.[6] The use of relaxing incisions followed by separation of some of the abdominal wall components followed by mesh reinforcement has become an excellent technique for the surgeon to add to his surgical armamentarium for the repair of giant ventral hernias. This technique has now been used in our institution on a second trauma patient with a fascial defect of 300 sq cm, with very satisfactory results. Only time will tell if the recurrence rate is greatly decreased as we envision it will be. Ours is in this sense a preliminary report, since greater numbers of patients with large ventral hernias requiring this same type of surgical repair, with longer follow-up, will be needed to answer this question. ❑

Acknowledgment: The authors thank Mr. Paul Twomey for his expert graphic art assistance.

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Vanderbilt Morning Report . . .

(Continued from page 19)

cardiography in the evaluation of atrial myxoma.

While atrial myxomas are histologically benign, their associated complications are potentially lethal, and therefore prompt operative excision is indicated. Ninety-five percent of patients are cured, but tumor recurrence has been reported in 5%. For this reason, some surgeons advocate removing the entire fossa ovalis to excise all myxomatous tissue commonly found in this region.[1] ❑

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Loss Prevention Case of the Month

Watch Closely

J. KELLEY AVERY, M.D.

Case Report

A healthy 20-year-old woman near term came to the hospital about mid-morning complaining of some cramping and low back pain. Since she was at about 38 weeks gestation, she was observed in the emergency department (ED) for a short while before being admitted to the labor and delivery suite (L & D) in early labor. Her family physician knew from the initial prenatal examination that she had a marginal pelvis, but a trial of labor was thought to be a prudent course at that time.

Over a period of about five hours labor did not progress and she was sent for an x-ray of the pelvis to determine more precisely the cephalopelvic measurements. The baby appeared to be normal in size, but the radiologist's opinion was that delivery from below would be very difficult and dangerous. The need for cesarean section was discussed with the patient and her family. They agreed with the plan. Another five hours elapsed before the patient was taken to the operating room, where the operation was done by the patient's doctor. The baby was delivered and appeared to be normal, with Apgar scores of 8 and 9, and the baby was said to have a vigorous cry immediately after delivery.

In the nursery the baby's weight was 5 lb 13 oz, temperature 100°F (rectal), pulse 148/min, and respirations 36/min. "Some retraction" of the chest was noted on the initial nursery room note, but no nasal flaring was documented. The physician checked the baby on two occasions in the nursery during the first two hours of life. It is noteworthy that the respirations were recorded at 56/min on the second note. An x-ray of the chest, done at this point, reported "lungs still have a ground glass appearance. Heart somewhat indistinct and may be enlarged. There are prominent air bronchograms in the lateral projections." The impression of the radiologist was, "Respiratory distress without other definite abnormalities." The nurses in the nursery continued to record retractions, and about five hours after delivery, the nurses recorded respirations at 80/min and "cyanosis about the mouth." The attending physician came to the hospital to see the baby and wrote as order, "Just watch the baby closely." At 6 hours of age the respirations were still recorded at 80/min and the physician was notified by phone. He ordered Flo-bi O_2 and it was given with some recorded improvement in the baby's color. Again two hours later the infant was said to be "dusky" in appearance. There is no mention in the record of the O_2 being discontinued, so one must assume that it was going continuously.

The dusky color continued, with rapid respirations, and retraction was recorded that seemed to be more pronounced as time went on. At 10 hours of age the infant's heart rate was recorded at 100/min, there was nasal flaring, more cyanosis, and loss of muscle tone. The decision was made at that time to transfer the baby to a neonatal intensive care unit in a nearby medical center. The first blood gases were done after the transfer team arrived and reported pH 6.7, $P\text{CO}_2$ 44.6, $P\text{O}_2$ 53.2, O_2 saturation 50.5. The transfer was accomplished without incident and the child survived, but with severe brain damage. A lawsuit was filed charging the physician with negligence in the delay in diagnosis of respiratory distress in the infant, and failure to effect a timely transfer of the baby to an appropriate facility.

Loss Prevention Comments

This case raises questions that must be asked. With a definitive diagnosis of a contracted pelvis and pelvic measurements that would not accommodate delivery from below, why the delay of more than five hours before doing the operation? The record would suggest that labor was going on all that time. With a 38 weeks gestation history and the apparent need for operative delivery, why wait and chance other unforeseen complications?

When did the attending physician see the x-ray report? This was a rural hospital, and the time of day that the picture was taken would suggest that it was not until the next day when the written report so definitely suggested respiratory distress. This may have been an occasion when the attending physician needed the help of the radiologist at the time the film was taken. If the physician was relying on his own interpretation of the chest x-ray, then one must wonder whether or not his interpretation was adequate to help in the treatment of this baby.

It is curious that the early and consistent finding of "retraction" by the nursery staff seemed to arouse little suspicion.

The respiratory rate was suspect from early in the life of this baby, arising from the initial 36/min to 56/min in the first hour of life. True, it did moderate somewhat with oxygen therapy, but the general trend was not reassuring. Why did not the attending physician write a definitive order for oxygen? How long was it given? Why was not a blood gas analysis ordered? Surely, with what we see here, the blood gas values could have prompted an early transfer.

While the nursery staff were "watching closely,"

(Continued on page 24)

Dr. Avery is chairman of the Loss Prevention Committee, State Volunteer Mutual Insurance Company, Brentwood.

The Case of the Month is taken from actual Tennessee closed claims. An attempt is made to fictionalize the material in order to make it less easy to identify. If you recognize your own case, please be assured that it is presented solely for the purpose of emphasizing the issues presented.

EKG Case of the Month

Hypokalemia

JAYANTH H. KESHAVA MURTHY, M.D.; SHOBHA R. HIREMAGALUR, M.D.; and
NATHAN A. RIDGEWAY, M.D.

Case Report

An 80-year-old hypertensive, demented white woman entered the emergency room complaining of diarrhea for one week. She was taking a thiazide diuretic, and her serum potassium was 2.0 mEq/L. Her admission electrocardiogram (EKG) is shown here (Fig. 1). On treatment of her hypokalemia the EKG findings resolved.

Discussion

What are the findings on EKG? The findings on the EKG are ST segment depression, decrease in T wave amplitude, and prominent U waves which are the classic EKG findings for hypokalemia. The other EKG changes that can be seen in hypokalemia are QRS prolongation, cardiac arrhythmias, and AV blocks.[1]

In which leads are the U waves best seen? The U waves are best seen in the *mid-precordial leads* and are considered significant when the U wave has an amplitude greater than 1 mm, or is taller than the T wave in the same lead.[1]

What are the conditions that can produce U waves? U waves on EKG are not pathognomonic of hypokalemia, as they can be caused by a variety of other things, such as type I antiarrhythmic drugs, amiodarone, phenothiazines, tricyclic antidepressants, hereditary long QT interval syndromes, sinus bradycardia, left ventricular hypertrophy, acute and chronic ischemic heart disease, and cerebrovascular accidents. Unlike hypokalemia, these produce a T wave amplitude that is usually normal or increased.[2]

What happens to the QT interval in hypokalemia? The QT interval is falsely prolonged, since in most instances the QU interval is measured because the U wave overlaps on the descending limb of the T wave. The best lead in which to measure the QT interval is lead aV_L, where the U wave amplitude is the lowest.[1]

What are some of the causes of hypokalemia? The common causes of hypokalemia are deficient dietary intake, vomiting, diarrhea, diuretics, metabolic acidosis, antibiotics such as carbenicillin and amphotericin B, primary and secondary hyperaldosteronism, glucocorticoid excess, excessive licorice ingestion, hypokalemic periodic paralysis, increasing insulin administration, and magnesium depletion.[3]

What are the clinical features of hypokalemia? Lack of potassium predominantly affects the neuromuscular transmission. Hence the main features include marked and generalized weakness of the skeletal muscles. When it is severe, the respiratory muscles are paralyzed, requiring ventilatory support, the smooth muscle

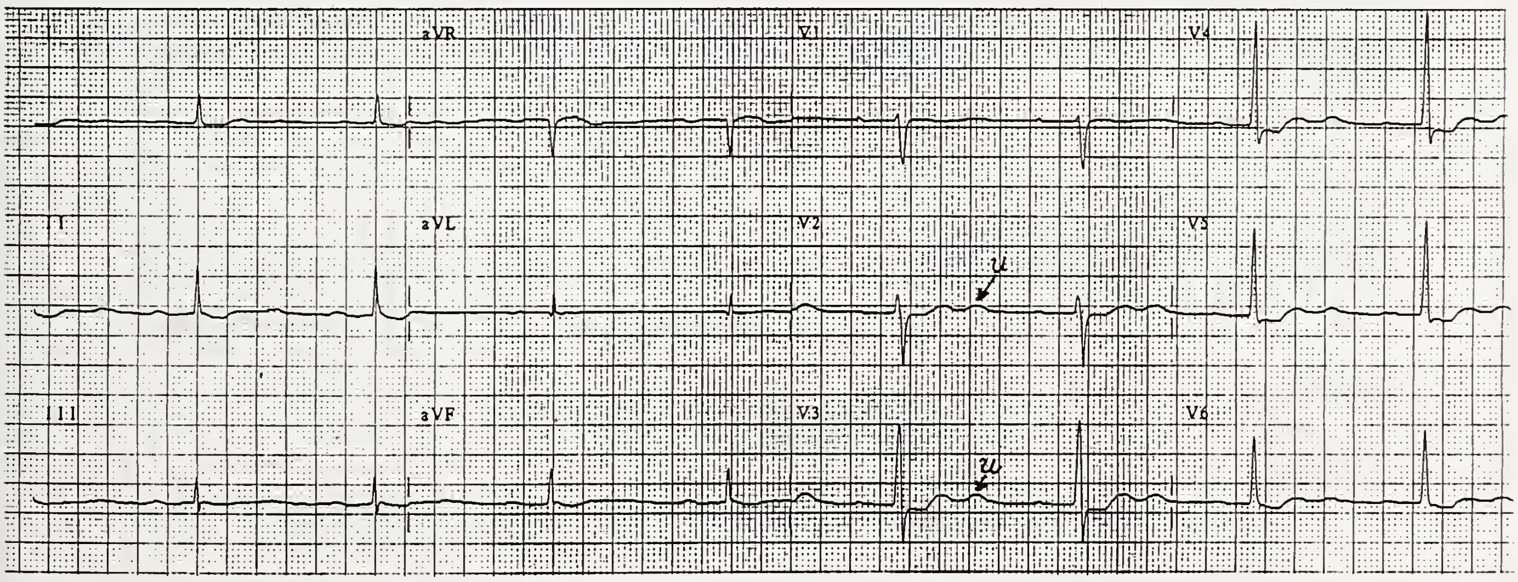

Figure 1. The EKG shows a sinus bradycardia at 50/min, a PR interval of 0.32 seconds, suggesting severe first degree heart block. The QT interval in lead V_2 is 0.40 seconds, the QTc interval is 0.37 seconds, and there are prominent U waves in mid-precordial leads.

From the Department of Internal Medicine, James H. Quillen College of Medicine, East Tennessee State University, Johnson City.

of the gastrointestinal tract is paralyzed, resulting in paralytic ileus, and there is rhabdomyolysis, leading to renal failure. The renal tubular concentrating ability is damaged, resulting in polyuria and polydypsia.[3]

How do you manage a case of hypokalemia? In treating a case of hypokalemia, the concentration of potassium in intravenous infusions should preferably not exceed 40 mmol/L with a maximum of 60 mmol/L. The rate of potassium replacement ideally should not exceed 20 mmol/hr, or approximately 200 to 250 mmol/day. During rapid replacement of potassium, EKG monitoring is required to prevent the cardiac toxicity of inadvertent hyperkalemia.[3] ❑

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Loss Prevention Case of the Month . . .

(Continued from page 22)

there was a period of about six hours when the attending physician was not present to observe his patient. While the nurses were "watching closely" this baby became progressively hypoxic and acidotic. Certainly there was much evidence in the record that the nursing staff was not competent to care for a sick baby. This attending physician surely had to know that they were in over their head!

The questions of competence in this case were apparent. Competence of both the physician and the nursing staff is in question from this record. The conclusion here must be that, with a neonatal intensive care unit only an hour away, neither the physician of record nor the hospital staff knew where they were with this sick baby. Settlement of this lawsuit was necessary. ❑

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Department of Health Report

WIC Program Celebrates 20th Anniversary

JEANECE SEALS, M.S., R.D.

Nutrition education and supplemental nutrient-rich foods are available to Tennessee's citizens through the Special Supplemental Food Program for Women, Infants, and Children (WIC). The WIC program, which celebrates its 20th year in Tennessee this year, provides these services without charge to eligible pregnant women, infants, and children up to age 5 through local health departments. The WIC Program expects continued caseload growth in the future, and encourages physician referrals in order to serve all eligible mothers and children.

In 1974, Congress funded two Tennessee WIC demonstration projects to help low-income pregnant and breast-feeding women, infants, and children receive the nutritious foods needed for a good start toward a lifetime of good health. The program has grown from fewer than 2,000 participants in 15 counties to a monthly caseload of more than 130,000 women, infants, and children in 94 counties across Tennessee.

The WIC Program provides milk, cheese, juice, peanut butter, iron fortified cereals, and infant formula to participants. All WIC participants also receive nutrition education and counseling to teach them how to use the food as a part of a good daily diet to improve long-term health. The foods are provided through vouchers that participants cash at grocery stores across the state. Nutritionists, nutrition educators, and nurses at local clinics teach participants basic nutrition information, food preparation, and shopping skills.

WIC-eligible persons must meet income guidelines and have a documented medical or nutritional risk. Individuals who receive food stamps or Aid for Dependent Children (AFDC), or who are covered by TennCare with no co-pay, are income-eligible for WIC. Many other individuals may also qualify. More than 180,000 women, infants, and children in Tennessee are potentially eligible.

In the past 20 years, the WIC program has become one of the most successful, cost-effective federally funded programs directed toward improving the health of its participants. Studies conducted by the U.S. Department of Agriculture (USDA), the Centers for Disease Control and Prevention, and the National Bureau of Economic Research showed that:

- WIC participants had a reduced incidence of low birth weight and infant mortality.
- Infants of mothers who were prenatal WIC participants had an increased head circumference.
- WIC participation resulted in a much higher rate of early prenatal care and immunization against childhood diseases. WIC is an effective entry point into the health care system for many women and children.
- WIC has been linked to major reductions in childhood anemia. Children's anemia rates before WIC enrollment were significantly higher than at follow-up visits.
- Women who participated in WIC during the postpartum period had higher hemoglobin levels and a lower risk for maternal obesity at their next pregnancy, as reported in a study at the University of California School of Public Health. Their infants had higher birth weights than the infants of non-WIC postpartum women.
- In Tennessee, breast-feeding in the WIC population has increased from 12% in 1984 to 21% during the first six months of 1994.

The provision of WIC benefits to pregnant women more than pays for itself through avoidance of health-related expenditures during the first year of life. In five states studied by the USDA, every dollar invested in WIC for pregnant women yielded Medicaid savings of $1.92 to $4.21 in the first year of their babies' lives.

The WIC Program foresees a bright future of continued service to mothers and children. Congress has shown confidence that WIC plays a major role in helping babies to be born healthy, helping children to be ready for school, and helping pregnant women to obtain needed ancillary services. The medical community plays an important part in the success of the WIC program through referral of potentially eligible patients to WIC services. ❑

From the Tennessee Department of Health, Nashville. Ms. Seals is director of Community Nutrition Services.

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Dodson Corner

Assigned Risk Pool Assessments Hinder Workers' Compensation Dividend Payments

TERRI MARSHALL

Across the nation, the workers' compensation (WC) system is undergoing a metamorphosis long-awaited by insurance companies and policyholders alike. Many states are reforming their WC systems to more equitably balance today's demands for fair pricing with the need for proper medical treatment for injured workers and financial protection for both employers and employees.

One catalyst for reform has been a growing dilemma within the WC system itself—assigned risk pool assessments. In recent years, these pools (made up of businesses that cannot find an insurance company to voluntarily write coverage) have become the markets of last resort for a growing number of employers and have severely hampered insurance companies from affordably writing WC insurance for everyone.

Each insurance company writing WC coverage in the state is required to subsidize these pools. As losses within assigned risk pools grow, the amount of money—or assessments—required to subsidize them also increases.

Since the risk pools directly affect how much it costs a company to do business within a particular state, rising assessments can hinder an insurance company's ability to pay dividends. Dodson's assessment in Tennessee for the 1992-93 policy period was 29.7%. For the 1993-94 policy year, Dodson estimates its assessment will surge to a whopping 43.7%.

What Causes High Assessments?

High assessments result from several factors that seem to work both with and against each other:

- Increased costs of medicine, physician, and hospital care;
- Higher benefits levels for injured employees;
- Increased usage of the system;
- A changing philosophy of entitlement among workers;
- New types of claims, caused by technologic changes in the workplace and liberal interpretations of the law by the courts and boards responsible for administering the system;
- Continually increasing attorney involvement in the system, originally conceived to be no-fault and non-adversarial.

The Solution: Shared Responsibility

- Business owners must become more safety conscious overall. This includes using better hiring practices and continually offering comprehensive training and supervision. They must be alert to fraudulent claims and work closely with insurance companies to bring about fair claim settlements.
- State legislators must be willing to pass laws that will make the system more efficient. Many states are combating high assessments by raising premium rates for businesses in the assigned risk pool and paving the way for a more competitive rating system. Some states, like Tennessee, are implementing programs that give an insurance company a credit against its assigned risk pool assessment if it voluntarily writes an account from the pool.
- State courts and boards must tighten up the administration of WC laws and not be tempted to stretch the laws beyond their intents.
- Insurance companies must constantly look for more efficient ways to provide this line of insurance. They must also work more closely with policyholders to help create and maintain safe work environments, and continually take advantage of cost controls to keep expenses at a reasonable level. ❑

From the Dodson Insurance Group (the TMA-endorsed Workers' Compensation Insurance Plan).

HELP FOR IMPAIRED PHYSICIANS

The Tennessee Medical Foundation Impaired Physician Peer Review Committee assists doctors who are suffering from the disease of chemical dependence, or mental or emotional illness, or both, including certain behaviors problematic for physicians. The thrust of the program is rehabilitative, not punitive. The Committee is composed of physicians who have special expertise in these areas, some from personal experience. Effective treatment for these illnesses is achieved most easily when the disease or illness is detected early. The Committee urges family, friends, and associates to avoid misguided sympathy which enables a physician's impaired condition to deteriorate.

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> —Warren Zevon

The results of Tennessee's most recent election, despite its acrimonious and often bizarre atmosphere, find organized medicine among the biggest winners. In the Governor's race, Don Sundquist sprinted to victory, with overwhelming financial support from the state's physician community. One of our own, Dr. Bill Frist, as well as Fred Thompson, were successful, both having the maximum backing from the AMA. November also found the AMA going 6-1 in the races for the U.S. House of Representatives, all based on the recommendations of the IMPACT Board of Directors.

Perhaps more significant to the TMA, IMPACT's election night record was without peer, going 13-0 in races for the all-important State Senate, which included a defeat of medicine's principal critic Senator Joe Nip McKnight (D-Jackson). IMPACT's role in the Senate races was particularly evident, having made a number of significant contributions that proved to make the difference in races where friendly candidates won by razor-thin margins. Despite the often unpredictable mood of the electorate, IMPACT-backed candidates were also victorious by a margin of 41-6 in contested races for the State House of Representatives. And Mary Ann Eckles (D-Murfreesboro), an active member of the TMA Alliance, eked out a hard-earned win for a State House seat with strong support from IMPACT.

Credit for these successes belongs to IMPACT's Board of Directors, which consists of one TMA member from each of the state's nine congressional districts plus an Alliance member. The Board member from each district is given the thankless and often weighty responsibility of providing final approval for all contributions within that region. In federal races, IMPACT is bound by the same contribution limits ($5,000 per election cycle) as its national affiliate AMPAC. Therefore, IMPACT does not directly contribute to federal races. Rather, the IMPACT Board submits recommendations to AMPAC, which acts upon those requests. IMPACT and AMPAC maintain an excellent working relationship.

One of the guiding tenets of IMPACT's operations is nonpartisanship. This point cannot be overemphasized. Candidates are evaluated based upon their positions on health issues, their relationship with TMA (if any), their perceived chances of winning, and the projected consequences of a mistake. This applies to every candidate whether Democratic, Republican, or Trotskyite. Members who take offense at individual decisions are reminded to look at IMPACT's overall record of success, which is the envy of other interest groups.

The lessons learned in recent legislative sessions have dramatically enforced the necessity of nonpartisanship. Party affiliation or even ideology can no longer be considered an accurate indicator of how a lawmaker will vote on health care issues. Traditional allies such as the business community have pushed to limit fees and curtail physician freedoms through managed care. Even many Republican members of Congress balked at AMA's Patient Protection Act. As a result, medicine will be forced to turn to a series of nontraditional and ever-changing alliances with groups such as trial lawyers, labor, and allied health providers. Compromises will have to be made. As one state PAC director so aptly stated, medicine may no longer pursue a scorched earth policy.

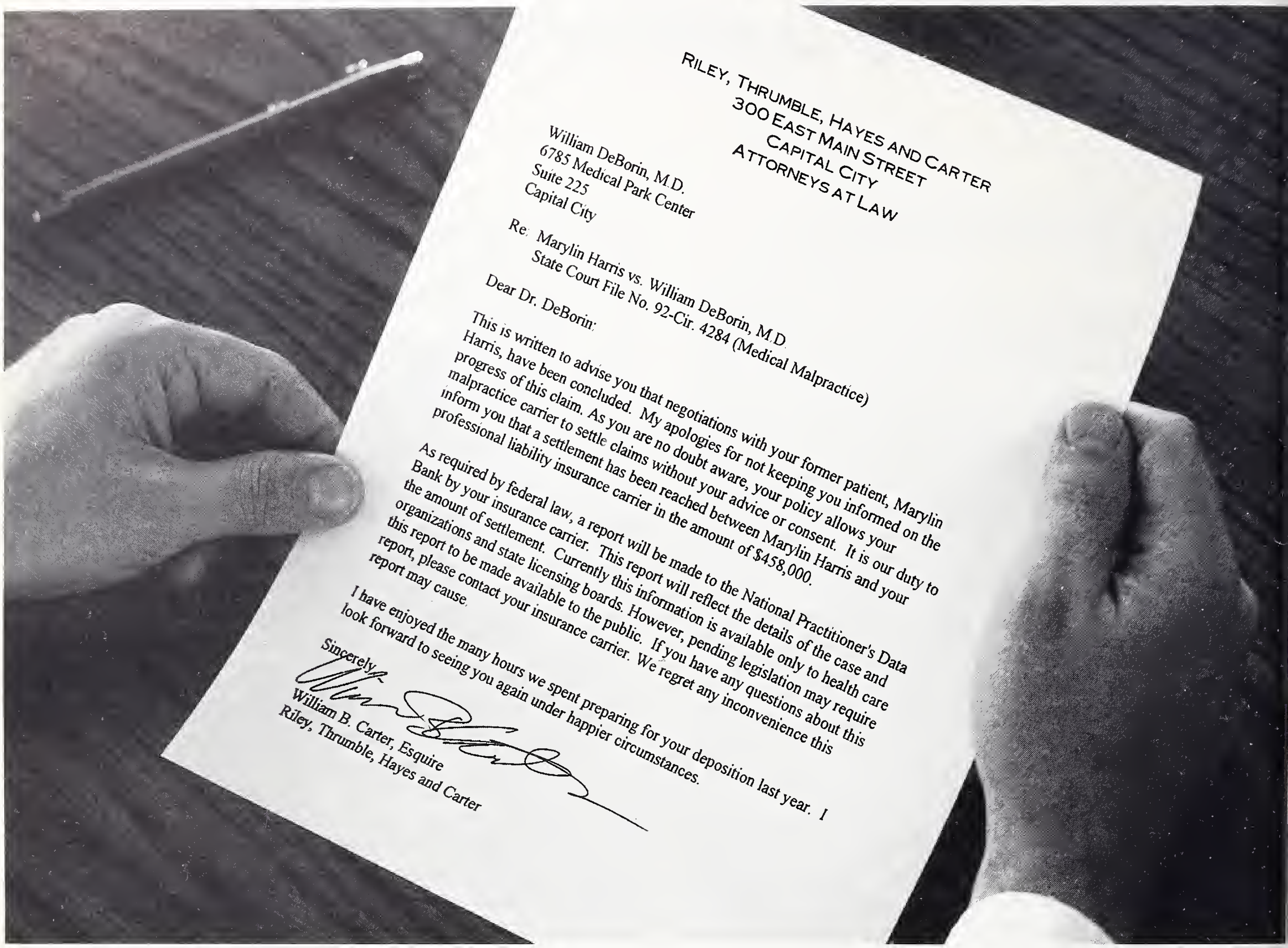
TMA has taken a number of steps to deal with the changing political climate. Witness the increased resources devoted to government affairs such as the hiring of additional lobbyists and a greater focus on regulatory affairs. This, along with the filing of the TennCare lawsuit, has demonstrated TMA's willingness to stand up and fight for its members' beliefs.

No TMA dues can be contributed to political campaigns. That's why IMPACT was formed. IMPACT is simply a way for us to provide the all-important financial dimension to medicine's voice in the capitol. Without friendly officials in Nashville, even the best arguments can fall on deaf ears. That's why IMPACT is so important. ❑

Mr. Greene is TMA Director of Government Affairs and assistant secretary/treasurer for IMPACT.

All PAC contributions are a matter of public record and are on file with the Federal Election Commission and the State Registry of Election Finance.

Medical Protective Policyowners *NEVER* get letters like this!



RILEY, THRUMBLE, HAYES AND CARTER
300 EAST MAIN STREET
CAPITAL CITY
ATTORNEYS AT LAW

William DeBorin, M.D.
6785 Medical Park Center
Suite 225
Capital City

Re: Marylin Harris vs. William DeBorin, M.D.
State Court File No. 92-Cir. 4284 (Medical Malpractice)

Dear Dr. DeBorin:

This is written to advise you that negotiations with your former patient, Marylin Harris, have been concluded. My apologies for not keeping you informed on the progress of this claim. As you are no doubt aware, your policy allows your malpractice carrier to settle claims without your advice or consent. It is our duty to inform you that a settlement has been reached between Marylin Harris and your professional liability insurance carrier in the amount of $458,000.

As required by federal law, a report will be made to the National Practitioner's Data Bank by your insurance carrier. This report will reflect the details of the case and the amount of settlement. Currently this information is available only to health care organizations and state licensing boards. However, pending legislation may require this report to be made available to the public. If you have any questions about this report, please contact your insurance carrier. We regret any inconvenience this report may cause.

I have enjoyed the many hours we spent preparing for your deposition last year. I look forward to seeing you again under happier circumstances.

Sincerely,

William B. Carter, Esquire
Riley, Thrumble, Hayes and Carter

Any allegation of malpractice against a doctor is serious business. If you are insured by The Medical Protective Company, be confident that in any malpractice claim you are an active partner in analyzing and preparing your case. We seek your advice and counsel in the beginning, in the middle, and at the end of your case. In fact, unless restricted by state law, every individual Medical Protective professional liability policy guarantees the doctor's right to consent to any settlement-- **no strings attached!** In an era of frivolous suits, changing government attitudes about the confidentiality of the National Practitioner's Data Bank and increased scrutiny by credentialing committees, shouldn't you have The Medical Protective Company as your professional liability insurer? Call your local General Agent for more information about how you can have more control in defense of your professional reputation.

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PROGRAM UNDERWRITER

VIRGIL H. CROWDER JR.

Medicine on Stage

As we approach the transition of state government to a new administration, physicians across the state are hopeful that medicine will be given a voice in the process of improving TennCare. The Tennessee Medical Association has a responsibility to do all it can to assist the new governor in a positive manner to improve the program. If given the opportunity, physicians can work through the controversies in TennCare and advise the governor on how the program can be appropriately and closely supervised.

With the coming of a new year and a new administration, Tennessee physicians are also faced with another new and approaching opportunity. TMA's 1995 (160th) Annual Meeting is scheduled for April 6-9 in Nashville. After several years of declining attendance at the meeting, your Board of Trustees made a commitment to infuse the Annual Meeting with quality and value for physicians in any specialty. This commitment has resulted in the development of *Medicine on Stage,* an event physicians in Tennessee cannot afford to miss.

Following over two years of study by your Board of Trustees and a survey of attendees to the 1994 meeting, the Board has implemented a broad-based but modest registration fee for the 1995 Annual Meeting. The much-needed revenue from this registration fee is making it possible to offer you some 20 hours of medical practice seminars, plus special seminars in leadership and personal development. Managed care and vertical integration are no longer just buzz words, and *Medicine on Stage* offers a power-packed opportunity for physicians to learn the details of how to survive and thrive in an increasingly managed care environment.

We haven't forgotten the personal side of medicine in this meeting, either. "Balancing Lives in the Crowded Theatre of Medicine" is a two-hour seminar that will help you clarify and manage your priorities. For those of you who can bring your spouse, be sure to attend the Sunday morning seminar titled "Medical Marriages: Balancing Commitments to Family and Profession."

One of the most significant opportunities at the meeting this year will be the "President's Reception and Evening at Ryman Auditorium." Our long-standing tradition of having a banquet on the last evening has been changed. This year, we can spend a little more time networking with each other in our reception, and then enjoy the award-winning theatrical production of "Always . . . Patsy Cline" at the Ryman Auditorium. This private, exclusive, one-night performance is being brought to you by TMA, with the cosponsorship of Astra/Merck Group of Merck & Company.

I look forward to greeting many old and new friends in Nashville this coming April.

Virgil H Crowder Jr. MD

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medical association

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JANUARY, 1995

editorials

1995—So What Else Is New?

I guess that is as good a title as any for a New Year's editorial—or this latest of what one of my regular and generally complimentary readers says I must laughingly call "editorials." Which calls for a digression before I even get started. This is the editorial page, which is where what I write as Editor of this *Journal* appears. That is my decision as Editor, and you know, of course, that the Editor may not always be right, but he is always the Editor, or is the Editor, at least, until the management says differently. From that standpoint, then, these are all editorials. My dictionary says that an editorial is an article in a publication expressing the opinions of the editor or publisher, and a longer definition in another dictionary, which I don't at the moment have at hand, says something about its being one designed to stimulate the reader's thoughts about the subject at hand. So far so good (I think). On the other hand, I have to confess that some of them would be more properly considered essays, and some of them, I guess, have few if any redeeming features. You can decide for yourself into which of the above categories, if any, this piece fits.

You also may not recognize this, at least from the title, as a New Year's editorial, or whatever, but it is (a) because I say it is, and (b) because this is the January issue, and it needs one, again because I say so. So much for definitions, disclaimers, and so on. I need to add, I guess, an apology for burdening you with some personal tribulations that I shall soon cast in your path in the process.

Before I go into all those tribulations, though, I need to take a short diversionary tack because there really is something new for the upcoming year and then some that happened just the other day. It threatened to scuttle the title before the piece even got off the ground. Besides my planned course for the editorial, it will alter the entire course of history, or at least I and some 65% of the nation's electorate are counting on its doing so. The results of last Tuesday's elections have upset a lot of apple carts, and in so doing have righted a whole lot more of them. Certainly a lot of things will change, and though I am not naïve enough to expect that everything will be coming up roses, since even the most beautiful rose can wound you, it is hard to imagine that the net effect will be anything but positive, and likely indescribably so, particularly insofar as the medical practice climate is concerned. Considering the travesty perpetrated on us by our former (by the time you read this) governor in the form of TennCare, the only possible direction for medical practice to go is up. It is hard for me to imagine a more enjoyable *bon voyage*. Maybe he can go back now to selling beer, which is something he was apparently good at.

As a matter of fact, I had some difficulty during its planning stage, and a few false fits and starts, in coming up with the title for this piece. My first thought was "A Death in the Family," for reasons

I'm sure will become apparent to you as you go along, but I ruled that out first because I feared you might take it literally and assume that there had indeed been the departure from this life of a family member, which is, at least as of this writing, mercifully not the case. I also feared that having come to such a realization, you might accuse me, not without justification, of having trivialized death, which I certainly did not intend. Nevertheless, I have been going through more or less the same emotions that are associated with such a loss, though mine are of less intensity, and actually, I guess, have a less valid basis.

One might, at least on superficial examination, think that the root of my tribulations should be cause for rejoicing instead of sadness, even depression. It involves a change in my venue from quarters that I have inhabited for something more than 25 years, to a new office in a brand new bright, shiny modern hospital. The difficulty arises in that whereas the older office was commodious, still functional, and comfortable, the new office is cramped, sterile, and only slightly more than a third as large. As a string-saver, in addition to being a collector of books and assorted whatnots, I find myself in the untenable position of having to make retention choices, since the home where I and my wife have lived and stored string (both of us) for nearly 40 years, suffers from the same inadequacies of space as my new office. What's more, though our four children have long since left the nest, not all of their belongings have, even though they all have homes of their own to clutter up.

I should hasten to add that I am not alone in my inconvenience, frustration, and sorrow. My associates are suffering from the same bereavement, though to a lesser extent, since having been here the longest, I had squatter's right on the largest office, and, as those of you who have seen it know, have stuffed it far beyond its intended capacity. Taking into account all the variables I have listed for you, you must know that the process of unstuffing it is causing me intense pain. Everything that I have preserved there has been preserved for a reason, and the reason it was put there nearly always still exists. Most often the reason is that I like it there.

I guess the only real answer to a plight such as mine is to save nothing at all. On the other hand, it has been my experience that no sooner has whatever I have thrown away become irretrievable, than I have immediate and urgent need of it. In a recent conversation about such dismal situations, a colleague and fellow string-saver recalled that he has in his possession a penguin with only one wing that he has been unable to bring himself to part with. My reaction, which would doubtless be that of all others like us, was, "Of course you couldn't. There can't be many one-winged penguins around, and you never know when you might need one."

I'm sure I've left you wondering, and saying to yourself, "All very interesting [assuming, of course, you think it is, which I recognize may not be the case at all]. But what does all of that have to do with New Year's?" Jesus had a parable about a rich man who tore down his barns and built bigger ones, until he finally had enough that he said to his soul, "Soul, take thine ease. You have everything you'll ever need. Enjoy!" No sooner had he said that than God upset his plans, and that very night said to him, "Thou fool! This night thy soul shall be required of thee. Whose, then, shall these things be?" Whenever someone asked me (which seems to have occurred with increasing frequency in conversations with friends, colleagues, and acquaintances) "What are you going to do about all this when you retire?" I have always answered, "I'm not. I'm going to die, and then someone else will have to worry with it."

So much for smart answers.

What I have to say about New Year's Day is that it has no inherent significance other than that it is the day one turns the calendar page from December of one year to January of the next. Aside from that, its significance is simply whatever one individually ascribes to it. For some the significance is in the party of the night before, and New Year's Day is simply a day for trying to concentrate on football while at the same time determining to drink less alcohol come next New Year's Eve, a resolution that is conveniently (or perhaps inconveniently) forgotten during the ensuing day or so. For me, it will engender this year a resolution, likely no more lasting than the one I have just described for you, to foreswear such an inordinate attachment to things, an affection that rightfully belongs only to God, and an attachment for which I have been repenting in sackcloth and ashes for the last couple of months. As you can see, much good it had done me.

And so 'bye, 'bye now. I have to go. I need to get about painfully lopping off and disposing of some additional integral parts of myself, and then doubtless repent some more.

Happy New Year, then. And a further word of advice for you: be sure to follow my advice and not my example.

J.B.T.

Prophylaxis

pro phy lax is Prevention of or protective treatment for disease. [New Latin, from Greek prophulaktikos, *prophylactic.*]

The late Howard Hughes was a billionaire. Much good it did him—or at least it did him in his later years. Of course, earlier it did him a world of good, or I guess it did. You know what they say: Money won't buy happiness—but it sure will buy all the things you use to get happiness with. Which may or may not be true. But be that as it may, Howard Hughes was a movie tycoon and married the actress Jean Peters. He owned Transworld Airways (TWA), designed airplanes, some of which he set world speed records in; one of those he designed, nicknamed the Spruce Goose because it was made of plywood, wouldn't fly. He owned a string of casinos in Las Vegas, and was a handsome man-about-town—in fact, about the world.

But Howard Hughes was scared to death of germs. I guess he was afraid he might die sometime, so he lived his last years as a recluse in one of his Las Vegas penthouses. As I said at the beginning, much good his money did him, except that it allowed him to indulge his phobia in relative ease, relative because of self-imposed inconveniences and discomfort. He would touch nothing with his bare hands, and almost continuously washed them. He would allow no one in his immediate proximity, and had stringent rules about food preparation and service. He never went out. But he died, after all, though not, I think of an infectious disease. His was, of course, one form of prophylaxis, though not a very attractive one for most people.

The typhoid fever epidemics in the armies during the War Between the States are legendary. The equally appalling ones during the Spanish-American War were carefully studied by Major Walter Reed, M.C., USA, who wrote a lengthy report, and made recommendations that prevented similar occurrences during later encampments. The prophylaxis was simple hygiene and sanitation, which had not previously been practiced much, if at all. For instance, it was customary for men in the field to tramp through excreta, and then go to bed with their shoes on. Reed's studies found all bedding grossly contaminated. He instituted screening for mess halls and food preparation areas to keep out the flies that also inhabited the waste disposal area. From his studies, the "triple f" concept of food, fingers, and fomites in the spread of typhoid fever was born. The typhoid vaccine, though clearly helpful, took a lot of undeserved credit for preventing typhoid epidemics in the First World War.

So far as infectious, or at least communicable, diseases are concerned, though, Howard Hughes had the right idea. He just overdid it. How much one has to do to be considered overdoing it depends on whom you ask. Mr. Hughes would have denied he was overdoing it. He was only, he would have said—likely did say—playing it safe. A more reasonable, or perhaps I should say less afflicted, person would maintain that although under those circumstances one might possibly live a little longer, it would certainly seem infinitely longer.

At the other end of the spectrum are those who believe, or act as if they believe, that the human body is impervious to microorganisms. That is just as clearly as irrational a view as that of Mr. Hughes, since healthy people do get sick from them. But if one tempers that view by maintaining that, barring an overwhelming inoculum, the human body with an intact immune system, particularly when coupled with modern drug therapy, is next to indestructible by microorganisms, that is pretty close to what I have decided after having watched so-called sanitation in operation during the 50 years since I finished medical school. Either that or there are a lot fewer carriers of disease organisms than I think there are or that one could reasonably expect there are. People are simply not as careful as they ought to be, on either the sending or the receiving end, and yet most people continue surviving largely intact. I have, for instance, watched otherwise fastidious colleagues of ours rise up from stool, and with unwashed hands rummage through a bowl of nuts in the doctor' lounge looking for that last cashew.

"Taking a pro," short for prophylactic, had a particular connotation in the military during the Second World War, which is the war I know about, and maybe during others, and even peacetime, too. In fact, though, that has to do not with protection against *a* disease or particular group of diseases, but against disease, period. Refraining from tobacco use is, for instance, prophylaxis against a lot of things. So is washing one's hands, getting proper exercise, eschewing excessive fat intake, and a lot of other things I need not enumerate for you.

While prophylaxis is not something to go overboard about, *a la* Howard Hughes, it is something we all need to pay careful attention to, both sending and receiving. We also need to urge and, since patients tend to be noncompliant (I know, because I'm also an occasionally noncompliant patient, myself) keep on urging, our patients to do the same.

J.B.T.

mail box

TMA's Domestic Violence Program

To the Editor:

The Tennessee Medical Association should be applauded for their recognition of the problem of Domestic Violence and its impact on society. A crucial aspect is to identify the problem. Often the victim is in denial and does not recognize the abuse. Physicians are often the only persons to whom the victim, reluctant to admit the battering to anyone, might say something.

Presenting symptoms are substance abuse; multiple injury sites; frequent headaches; gastrointestinal problems; eating or sleeping disorders; psychological distress; depression; suicidal ideation; high anxiety; evidence of sexual assault or rape; pregnant women with any injury especially to abdomen and breasts; patient's explanation inconsistent with type and location of injury; delay between the onset of injury and arrival for treatment; bruises, cuts, or fractures at different stages of healing; and hypervigilence. Any of these should make the treating doctor aware that there may be domestic violence in the picture.

The abused may still not admit the violence but the doctor's recognition of the problem is an important first step. The reluctance of health care providers to delve into the matter may be due to their own uncertainty about the next step for the victim. TMA has helped fund a toll-free number to provide information to victims. The number is (800) 356-6767. In the larger metropolitan areas there are specific numbers which can be called. Phone numbers may be the only aid available at that time. The victim may not take written material but a number can be memorized for immediate or future use.

Dr. Bowers, in his CARE Program Update in the October issue of the *Journal*, mentioned that physicians who suspect or confirm abuse have a duty to report such abuse. There is a mandatory reporting law on child and adult abuse which requires reporting to the Tennessee Department of Human Services. There are child abuse lines and adult protective services hotlines in every area answered on a 24-hour basis. The confidentiality of the doctor/patient relationship does not operate in this instance. Reports *must* be made.

Victims of domestic violence are psychologically damaged. People who attempt to help them are often frustrated, become discouraged, and then "turn against the victim" or just give up. Most victims leave the marital residence three to four times before leaving permanently. Reasons for their behavior could be that victims feel responsible for not "making things go right." They are ashamed, guilty, isolated, frightened, and hopeful that the abusers really will change and the abused will find a way "not to cause them to behave" this way. They may not recognize that every family does not live that way. The victims are depressed and cannot think clearly, all of their energy is spent on living from day to day avoiding anger, they are terrified that if a departure is made the threats will be carried out.

Society must take responsibility for this illness and all must take steps to remedy the situation. If more abusers were told you cannot do this, and victims were told you do not deserve this, do not tolerate this, we would then have healthier families and stop this cycle of violence.

Jay Ku
Brown & Ku Attorneys at Law
615 Lindsay #300
Chattanooga, TN 37403

Editor's Note: The TMA launched its own Domestic Violence Program in October 1994 to further educate physicians about this tragic social epidemic and the role of physicians. If you would like TMA's education packet, call toll-free (800) 659-1862 outside Nashville; (385-2100 in Nashville).

in memoriam

William R. Bailey Jr., age 60. Died October 23, 1994. Graduate of University of Florida College of Medicine. Member of Knoxville Academy of Medicine.

Charles Emmitt Chapman, age 57. Died November 9, 1994. Graduate of University of Tennessee College of Medicine. Member of Sullivan County Medical Society.

Howard S. Downs, age 85. Died October 9, 1994. Graduate of Loma Linda University School of Medicine. Member of Nashville Academy of Medicine.

William Kendrick Owen, age 84. Died October 22, 1994. Graduate of Vanderbilt University School of Medicine. Member of Giles County Medical Society.

new members

The *Journal* takes this opportunity to welcome these new members to the Tennesssee Medical Association.

BRADLEY COUNTY MEDICAL SOCIETY
Thomas V. Bolling, M.D., Cleveland

CONSOLIDATED MEDICAL ASSEMBLY OF WEST TENNESSEE
Bowen Asserson Jr., M.D., Jackson
Mark Roy Bateman, M.D., Jackson

LAWRENCE COUNTY MEDICAL SOCIETY
Penny Smith Mediate, M.D., Lawrenceburg

MEMPHIS-SHELBY COUNTY MEDICAL SOCIETY

(Students)

Kenneth Allum II
Frank N. Anthony
David B. Argo
Kenneth D. Beaty
Eric D. Blakney
Danielle E. Bowen

Christie N. Brooks
Thomas L. Brown
Chad L. Calendine
Eric L. Caten
Susan Choo
Vincent Chung
Kenneth Clark
Wilson M. Clements
Jason P. Collins
Harold P. Crabtree II
Stephen G. Cunningham
Chris Cwik
Christopher D. Dobrose
Christopher M. Dress
John Evans
Matthew J. Fabian
Christie E. Farris
Katherine Florendo
Melanie R. Foley
Jeffery J. France
Eddie L. Giaroli
Daran G. Glenn
Bert A. Hartman
Stephen H. Heffington
Natasha M. Heider
Shaun L. Helmhout
Paula A. Herring
Clarence G. Herrington III
Gabriel Y. Hickey
Shanon K. Huggins
Ronald T. Jabaley
Nicole M. Jennings
David C. Jerden Jr.
Thomas W. Jernigan
Judith A. Jordan
Lisa C. Joyner
Tareck A. Kadrie
Brandon S.J. Kang
Wendy L. King
James T. Kirby Jr.
Bradley P. Large
William B. Lofton
Mark R. Looney
Catheryne L. McCalla
Shannon O. McCallie
Joshua McCollum
Angela E. Meadows
Lattimore M. Michael II
Marc J. Mihalko
Paul W. Miller
Brian C. Mitchell
Jori L. Monday
Jennifer Morrow
Barbara Nguyen
Karen Ourth
James D. Peyton
Kay L. Philips
Brett C. Plyler
Laura J. Prather
Billy D. Pruett
John H. Purvis
Mark S. Rasnake
K. Gautham Reddy
Bill Robertson
Karen Roe
Amy R. Rosine
Kerry W. Ross
Benjamin S. Scharfstein
Jay M. Sizemore
Deirdre Smith
J. Suzanne Smith
Amy L. Spears
Natascha B. Stone
Jeremy T. Sullivan
Barbara J. Summers
Bianca J. Sweeten
John E. Tape II
Valerie L. Vick
Ulysses C. Walls
Edward H. Welles IV
Jeff T. Williams
Andrea E. Yancey

RUTHERFORD COUNTY/STONES RIVER ACADEMY OF MEDICINE
Andrew Maurice Wright, M.D., Murfreesboro

WASHINGTON-UNICOI-JOHNSON COUNTY MEDICAL ASSOCIATION
Ralph L. Mills, M.D., Johnson City

(Students)

Dhaval Adhvaryu
Jane Arrange
Christi Bell
Beatrice Brewington
Laura Bryant
Greg Candell
Stephanie Carter
Catherine M. Chandler
Jason Coffey
Marc Counts
Donna Cove
William Cummins
James Davenport
Andrenette Fleming
Michael Fowler
Trevor Gage
James A. Gray
John D. Gross
Eric Harman
Jonathan Ingram
W. Marty Isbell
Gene Krishingner Jr.
Chris Landess
Jeff McCarter
Philip J. McGee
Scott Monen
James Morgan
Cindi Raines
Edie D. Riden
Todd J. Scarbrough
Susan Sharp
Brandon Smithey
Michelle Stevens
Jennifer Taylor
Christian F. Wathen
Chris Weltz
Kelly W. White
Tom Williams
Grayson Woods

WILLIAMSON COUNTY MEDICAL SOCIETY
Max T. Caudill, M.D., Franklin

personal news

Louis A. Cancellaro, M.D., Johnson City, has been elected president of the Southern Medical Association.

Frank M. Eggers, M.D., Memphis, has been elected president of the Southeastern Neuroradiologic Society.

Michael R. Fleenor, M.D., Bristol, has been accepted as an active member of the American Society for Surgery of the Hand.

Nat E. Hyder Jr., M.D., Johnson City, has received the Distinguished Service Award from the Tennessee Academy of Family Physicians.

TMA Members Receive AMA Physician's Recognition Award

The following TMA members qualified for the AMA Physician's Recognition Award during October 1994. This list, supplied by the AMA, does not include members who reside in other states.

Physicians can receive the PRA certificate valid for one, two, or three years. For the one-year award, physicians report 50 hours of continuing medical education, including 20 hours of Category 1; for the two-year award, physicians report 100 hours of CME, including 40 hours of Category 1; for the three-year award, physicians report 150 hours of CME, 60 of which are Category 1. Each application for the PRA must also verify participation in Category 2 CME activities.

John B. Cage, M.D., Nashville
Dee J. Canale, M.D., Memphis
Daniel S. Corlew, M.D., Murfreesboro
David B. Elias, M.D., Chattanooga
Andrew M. Evancho, M.D., Knoxville
John E. Keyser III, M.D., Nashville
Lawrence S. Nagle, M.D., Chattanooga
James R. Noonan, M.D., Dyersburg
Jorge Rojas-Brassetti, M.D., Nashville
E. Conrad Shackelford, M.D., Hendersonville
Daphine Sprouse, M.D., Nashville
Horace E. Watson, M.D., Nashville
Gates J. Wayburn, M.D., Nashville
Lawrence K. Wolfe, M.D., Nashville

announcements

CALENDAR OF MEETINGS

NATIONAL

Feb. 5-8	Southern Surgical Congress—Sheraton, New Orleans
Feb. 16-19	American Academy of Pain Medicine—Marquis Hotel & Villa, Palm Springs, Cal.
Feb. 16-21	American Academy of Orthopaedic Surgeons—Orlando
Feb. 24-Mar. 1	American Academy of Allergy and Immunology—Hilton, New York
Mar. 1-4	Association for Academic Psychiatry—La Mansion del Rio, San Antonio
Mar. 2-5	American Medical Directors Association—Disney's Contemporary Resort, Orlando
Mar. 2-5	American Psychosomatic Society—New Orleans
Mar. 4-8	American Society of Clinical Hypnosis—Doubletree at Horton Plaza, San Diego
Mar. 9-12	American Society for Adolescent Psychiatry—Hyatt, Sarasota
Mar. 16-18	American College of Legal Medicine—Walt Disney World Dolphin, Orlando
Mar. 16-19	American College of Physicians—Marquis Marriott, Atlanta
Mar. 17-19	American College of Nuclear Medicine—Saddlebrook Resort, Tampa
Mar. 19-23	American College of Cardiology—New Orleans
Mar. 23-25	Big Sky Pulmonary Ski Conference (Amer Lung Assoc)—Big Sky Resort, Mont.
Mar. 26-29	American Institute of Ultrasound in Medicine—Marriott, San Francisco
Mar. 30-Apr. 2	American College of Preventive Medicine—Hyatt, New Orleans
Mar. 30-Apr. 2	American Society of Regional Anesthesia—Peabody, Orlando
Mar.30-Apr. 2	International College of Surgeons—U.S. Section—Hyatt, San Diego

STATE

Feb. 18	Tennessee Society of Anesthesiologists—Opryland Hotel, Nashville

Actions of the Tennessee State Board of Medical Examiners

October 1994

Name: Simon Ruminson, M.D. (Paducah, KY)

Violation: Inappropriate prescribing of controlled substances to spouse.

Action: Per agreed order, placed on probation for five years; medical practice limited to extent that he not prescribe controlled substances except in emergency room situation.

Name: Darrell K. Wells, M.D. (Hendersonville)

Violation: Unable to obtain additional psychological testing recommended by evaluating psychiatrist in compliance with requirement of Board order.

Action: License indefinitely retired.

TMA Alliance Report

Partners in Medicine—Success in Action

Daily changes in the practice of medicine seem to be a fact of life. State and federal legislation is impacting upon physicians' practices with their emphasis on programs of wellness and prevention.

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With the passing of the Bicycle Helmet Law, concern for children's safety was the driving force behind a joint project between our Lakeway Medical Society and the Alliance. To ensure that all third and fourth graders in the county were familiar with and obeyed the law, the Society financially supported a "Helmets are Cool" program. The Society's co-sponsorship, along with a grant from the TMA Alliance, enabled many helmets to be given to children. Local physicians also donated bicycles as prizes.

The Alliance worked unstintingly—organizing, visiting the schools, teaching, following up—perfecting the art of becoming Partners to ensure a successful outcome. ❑

Catherine McKnight
President, Lakeway Alliance

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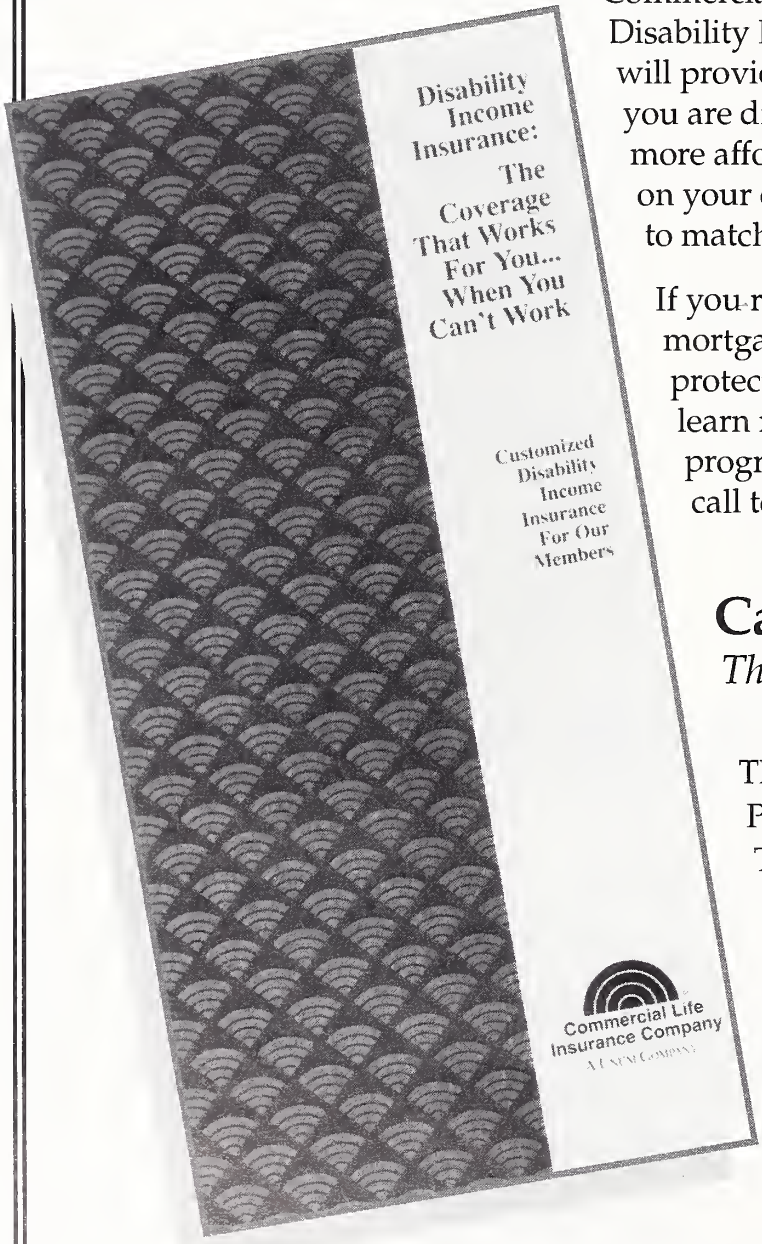

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Highlights of the TMA Board of Trustees Meeting
October 9, 1994

The following is a summary of the major actions taken by the Board of Trustees of the Tennessee Medical Association at it regular fourth quarter meeting in Nashville, October 9, 1994. The Board:

TMA Physician's Resource Network, Inc.

Agreed to conduct a TMA member feasibility survey to determine interest in various organizational options with the TMA Physician's Resource Network, Inc.

TMA Standing Committees

Agreed to recommend elimination of the Scientific Affairs Committee as a standing committee, blending its responsibilities for administering TMA's role as an accredited sponsor of CME into the responsibilities of the Continuing Medical Education Committee.

Agreed to recommend dissolving the Peer Review Committee, transferring peer review responsibilities to the Judicial Council.

Agreed to recommend dissolving the Committee on Hospitals, transferring responsibilities to the Interprofessional Liaison Committee and the Committee on Legislation.

TMA Special Committees

Agreed to dissolve the Advisory Committee to the TMA Alliance, since the Alliance already interacts directly with the TMA Board and committees.

Agreed to continue the Committee on Maternal and Child Care, and will review the committee in one year to determine if it should continue as a special committee or be dissolved.

Agreed to change the name of the Geriatric Committee to the Geriatrics and Long-Term Care Committee.

Agreed to establish a TMA Annual Meeting Development Committee as a special committee.

Agreed to appoint a Task Force on Managed Care, with the current Executive Committee serving as its members at the present time.

Leadership Summit

Accepted a report from Mr. Alexander on the 1995 Leadership Summit to be held January 13-14, 1995 in Nashville.

Committee on Legislation

Approved the Committee on Legislation's 1995 legislative positions for the upcoming General Assembly; also agreed to allow the Committee on Legislation to use outside consultant lobbyists on an "as needed" basis.

Committee on Communications and Public Service

Approved the 1995 Community Awareness Resource and Education (CARE) program budget.

Review of Resolutions

Reviewed each TMA resolution adopted in 1988 for the purpose of allowing to sunset, and adopted positions on each for recommendation to the TMA House of Delegates.

1995 Committee Appointments

Reviewed a list of members of TMA's standing and special committees in preparation for consideration of member appointments to committees in January 1995.

Home Health Nursing

Directed the Interprofessional Liaison Committee to investigate the possibility of establishing guidelines in the use of home health nursing and to report back to the Board in January.

Medical Laboratory Board

Agreed to submit the following names for consideration of appointment to the Medical Laboratory Board: Drs. Jerome Abramson, Chattanooga; Samuel H. Dillard Jr., Nashville; and Charles Handorf, Memphis.

Medical Care and Cost Containment Committee

Agreed to defer action on the submission of names for consideration of appointment to the Medical Care and Cost Containment Committee.

Third Quarter Financial Statement

Approved the Third Quarter Financial Statement as presented.

Annual Meeting Locations

Agreed to hold the annual meeting in Nashville every other year and to hold the meetings in the other grand divisions on the alternate years.

Retirement of Ms. Silvia Aliberti

Directed staff to develop a citation to be presented to Ms. Silvia Aliberti honoring her for her many years of service as executive director to the Roane-Anderson County Medical Society. ❑

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Venous Air Embolism and the Central Venous Catheter

J. DAVID LEE, M.D. and THOMAS M. ROY, M.D.

Introduction

Many invasive procedures can result in entry of air into the circulation. This report addresses venous air embolism (VAE) associated with the use of central venous access catheters, a common device in hospitals that provide critical care and parenteral nutrition.

Previously identified situations that allow VAE with central catheter use are: (1) complications of catheter insertion; (2) fracture of the catheter hub or disrupted connections; (3) ambient gas traveling along the catheter tract after line removal; and (4) piggyback infusions running dry.[1]

That VAE is not a frequent clinical problem despite widespread use of central venous catheters is a testament to the skill of most practitioners and to the typically large volumes of gas that must rapidly enter the circulation to cause a catastrophe. By the same token, it is often more difficult for the clinician to recognize VAE because of a relative lack of experience with it.

We present the case of a patient who experienced clinical VAE that was diagnosed by echocardiography. The patient was placed in jeopardy by damage to the patency of the venous cordis seal after the insertion of an arteriogram catheter, disrupting connections and allowing air entry. To our knowledge, this practice has not been reported as a potential source of air embolism.

Case Report

A 45-year-old woman with chronic obstructive pulmonary disease (COPD) and a history of recurrent pulmonary embolism had a Mobin-Udin inferior vena cava filter placed 12 years earlier. She had done well, with only two admissions to the hospital for exacerbation of COPD. On each occasion she responded to inhaled bronchodilators and intravenous aminophylline.

She was admitted to the hospital for increasing dyspnea and right pleuritic pain that had awakened her from sleep. She had a nonproductive cough that she attributed to her continued use of cigarettes. She denied hemoptysis, fever, chills, syncope, or swelling of the extremities. Physical examination was remarkable for bilateral wheezes and a prolonged expiratory phase.

The patient did not improve significantly with the administration of inhaled bronchodilators and intravenous aminophylline. An emergency V/Q scan obtained by the Emergency Department physician was interpreted as indeterminate for pulmonary thromboembolism. To facilitate an emergency pulmonary arteriogram, a cordis was placed without difficulty in the right internal jugular vein by the ER physician, and the arteriogram was performed by passing the arteriogram catheter through the cordis. No evidence of pulmonary thromboembolism was apparent on the pulmonary arteriogram. The patient was transferred to the medicine ward to receive continued respiratory therapy for exacerbation of COPD.

Two and one-half hours later, the patient developed more severe respiratory distress and cyanosis, became unresponsive, and was intubated. Initial concern was that there had been an anaphylactic reaction to the dye used in the arteriogram. She was treated with epinephrine, diphenhydramine, and methylprednisolone. A harsh blowing systolic murmur over the left sternal border was heard, and

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From the Division of Pulmonary Medicine, James H. Quillen College of Medicine, East Tennessee State University, and the Mountain Home Veterans Affairs Medical Center.

Reprint requests to Division of Pulmonary Medicine, Veterans Affairs Medical Center, Mountain Home, TN 37684 (Dr. Roy).

TABLE 1

SYMPTOMS OF AIR EMBOLISM

Symptom	Occurrence
Loss of consciousness	70%
Loss of extremity movement	54%
Seizure	38%
Loss of sensation in extremity	31%
Vertigo	31%
Mediastinal emphysema	23%
Nausea/Vomiting	23%
Unilateral chest pain	15%
Subcutaneous emphysema	15%
Aphasia	8%
Blindness	8%
'Spaced out' aura	8%

TABLE 2

SITUATIONS OF RISK

- Central venous catheters
    - a) Insertion
    - b) Removal
- Lung biopsy
- Laparoscopy
- Neurosurgery
- Air contrast salpingogram
- Pelvic surgery
- C-section delivery
- Empty infusion pumps
- Positive airway pressure
    - a) Ventilation with PEEP
    - b) SCUBA
    - c) Hyperbaric chambers
- Arterial catheters
- Angiography
- Chest trauma
- Cardiopulmonary bypass
- Autotransfusion devices
- Renal dialysis

EKG showed sinus tachycardia with ST depressions in leads 2, 3, and aV_F, and ST elevation in leads V_2 through V_5. Chest radiograph was unremarkable. An echocardiogram was performed to further delineate cardiac status. Air bubbles were seen in the left ventricle, providing the correct diagnosis of VAE.

With the patient supine, the cordis was immediately removed and saved for later examination. An occlusive dressing was applied to the insertion site, and the patient was kept in the left lateral decubitus position in an attempt to trap residual air in the ventricular apices. Oxygen was supplied at 100% to facilitate reabsorption of air. The patient regained consciousness and her pulmonary status gradually improved. The murmur vanished in approximately four hours.

Echocardiography with injection of agitated saline and approximately 0.25 cc of air was repeated after 24 hours. The study failed to show any patent communication between the right and left sides of the heart. The patient had an uneventful recovery and was discharged from the hospital without neurologic difficulties.

Discussion

The true incidence of venous air embolism associated with central venous lines is unknown, but is suspected to exceed recognition. For example, there is a reported 100% incidence of VAE during upright neurosurgery, but only a small likelihood of clinically significant symptoms.[2]

The effect of VAE is dependent upon both the volume and flow rate of air entering the vascular system. As little as 0.05 cc of air in the arterial system can cause death in animals by cerebral or coronary embolism.[3] In the venous circulation, Ordway[4] calculates that 20 cc/sec of air is required to produce symptoms. A flow rate of 70 to 150 cc/sec would be lethal, but a total volume of only 0.5 cc/kg would be required to cause cardiovascular symptoms.

The pathophysiology of air embolism is still under study. In the venous system, the mechanical effects of the trapped air bubble acts as an air-lock, making cardiac contractions ineffectual. Equally important are the events at the gas-plasma interface, where turbulence promotes activation and attachment of fibrin to the exposed surface. With increased fibrin deposition, clots form and increase platelet aggregation, which is dislodged into the lung with release of vasoactive substances such as histamine and serotonin. Pulmonary vasoconstriction, airway constriction, and increased capillary permeability follow. This sequence leads to pulmonary hypertension and edema in many cases of VAE. In the arterial circulation, the air bubbles physically obstruct blood flow in the end arterioles and may cause cerebral or cardiac ischemia.

The clinical signs and symptoms of VAE can be nonspecific, and may mimic acute cardiopulmonary or cerebrovascular events (Table 1). An awareness of the procedures that might lead to air embolism is essential in arriving at the correct diagnosis (Table 2). The physical examination typically reveals cyanosis, tachypnea, and hypotension. Cardiac auscultation may define the classic "mill wheel" murmur of a faulty pump. This murmur is a transient event that requires a large volume of gas in the right ventricle. The EKG may show ischemic changes, bradycardia, tachycardia, conduction disturbances, or right heart strain.[5] Echocardiographic confirmation of air in the ventricles is diagnostic.

Treatment must be instituted as soon as VAE is suspected. The reported mortality varies between 29% and 43%.[6] The patient should be immediately placed in the left lateral position with the head of the bed lower than the foot of the bed (Durant's position). In this position air bubbles will migrate to the apex of the right ventricle and allow continued circulation of blood through the pulmonary tract into the lungs and then to the left heart. Oxygen at 100% concentration is administered to allow a pressure gradient for the diffusion of nitrogen from the air pocket to the blood and then to the alveoli. Removal of large volumes of air from the right ventricular apex can be accomplished with a flow directed catheter, thereby reducing the duration of clinical symptoms.[7]

Many patients with VAE will have the catastrophic manifestations of arterial air embolism. Air bubbles can pass from the venous to the arterial system in two ways. The first route is through a congenital communication such as an atrial or ventricular septal defect, or a potentially patent foramen ovale, which is present in 20% of normal individuals. The second possible avenue of right-to-left flow is venule-to-arteriole nests in the pulmonary vasculature, which are normally closed due to pressure differences between the arterial and venous circulations. These nests lack capillaries, and are opened only by significant pulmonary arterial hypertension.[8] Once forced open, the filtering capacity of the pulmonary vasculature is breached, and air enters the arterial circulation.[9] The definitive treatment for symptomatic arterial air embolism is hyperbaric oxygen therapy to decrease the size of the bubble (and thus the obstruction) by increasing atmospheric pressure.[10] Hyperbaric therapy also increases the absorption of the air from the circulation by providing hyperoxygenation.

A venous cordis was placed in our patient in the Emergency Department, a common procedure in our institution in the severely ill patient who is likely to require hemodynamic monitoring or fluid resuscitation. In this instance, the cordis was used to guide an arteriogram catheter into the venous circulation. After arteriography, the catheter was removed and the sidearm of the cordis was used for the infusion of aminophylline.

After removal of the cordis, it was determined that the facing at the catheter insertion port of the cordis had not resealed after removal of the arteriogram catheter. With the greatly increased negative intrathoracic pressures generated by the patient's work of breathing, it became possible for her to entrain air through the cordis "seal."

Personal communication with the manufacturer revealed that the catheter insertion seal is not intended to be air-tight once its integrity has been compromised by the passage of a catheter. Although it is estimated that 200 mm Hg of negative pressure would be required to introduce air through an intact seal, once patency is breached a "set" is marked in the rubber of the seal. If the catheter is removed from the cordis, the "set" may prevent total closure and allow fluid to leak out, or, under certain conditions, air to enter. The instructions with the cordis state that if no catheter is to be passed, an obturator should be installed in the port to prevent fluid leakage.

We have seen the cordis used as a convenient avenue for the insertion of a variety of catheters and have always assumed that the seal returned to its original shape on removal or exchange of catheters. We hope that our observation will alert other clinicians to this potential mechanism for VAE. ❑

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HELP FOR IMPAIRED PHYSICIANS

The Tennessee Medical Foundation Impaired Physician Peer Review Committee assists doctors who are suffering from the disease of chemical dependence, or mental or emotional illness, or both, including certain behaviors problematic for physicians. The thrust of the program is rehabilitative, not punitive. The Committee is composed of physicians who have special expertise in these areas, some from personal experience. Effective treatment for these illnesses is achieved most easily when the disease or illness is detected early. The Committee urges family, friends, and associates to avoid misguided sympathy which enables a physician's impaired condition to deteriorate.

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Basic Concepts of Antioxidant Therapy

RICHARD P. WHITE, Ph.D. and JAMES T. ROBERTSON, M.D.

Introduction

In the past decade there has been an explosive interest in the use of antioxidants to promote health and fight disease. Vitamin C, vitamin E, and beta-carotene are advertised on television as essential ingredients for health, and physicians administer stat the antioxidant methylprednisolone to patients with spinal injury. There is experimental evidence that one antioxidant, tirilazad, is much more potent than methylprednisolone in combating central nervous system injury, and it is currently being evaluated in patients suffering from head trauma and subarachnoid hemorrhage.

Antioxidants are compounds that donate hydrogen atoms to oxygen or to activated species of oxygen. Oxygen is the most abundant oxidant, eager to obtain electrons of hydrogen. BHT (butylated hydroxytoluene), BHA (butylated hydroxyanisole), and vitamins E and C readily yield hydrogen, and may be used to preserve the freshness of food. During the enzymatic transfer of electrons (redox), however, oxygen, being eager for electrons, may pick up an electron in normal cell metabolism to form the potentially destructive superoxide free radical $O_2^{\bar{\cdot}}$ (Fig. 1). Superoxide is simply molecular oxygen that accidently acquired one extra (unpaired) electron to give the molecule its negative charge; it is also variously called superoxide anion, oxygen free radical, and superoxide radical. Other symbols used are O_2^- and $O_2^-\cdot$, with the dot representing an unpaired electron. How it is normally disposed, and why it may give rise to more destructive free radicals, is basic to understanding antioxidant therapy.

The terms antioxidant and free radical scavenger are often used interchangeably to refer to any substance that reduces cell damage caused by destructive species of oxygen like superoxide or hydrogen peroxide (H_2O_2).[1] These include antioxidants, enzymes, certain enzyme inhibitors, and chelators of iron. Ferrous iron (Fe^{++}) can yield an electron to H_2O_2 or to a lipid peroxide (LOOH) to generate the most destructive of all free radicals, the hydroxyl radical (OH·), which has 9 protons and 9 electrons, one of them being unpaired. This free radical attacks any organic compound: DNA, protein, cell membranes. It is also formed when gamma rays strike water, killing cells.[2] The half-life of OH· is extremely short, measured in nanoseconds.[1]

The peroxides mentioned are forms of reduced oxygen that are more cytotoxic than molecular oxygen, though far less reactive than the OH· radical (e.g., they do not attack DNA). The peroxides are normally eliminated enzymatically, but can be the parent compounds of very destructive free radicals (Figs. 1 and 2). The term activated (or reactive) oxygen species applies to states and compounds of oxygen more reactive than molecular oxygen, and therefore include both free radicals and peroxides.

Oxidative Stress and Free Radicals

Inhalation of 100% oxygen soon causes lung damage, brain damage, and also blindness, as the retina has the highest O_2 consumption of any tissue. When cells produce abnormal amounts of free radicals such as superoxide or activated oxygen species like H_2O_2 or LOOH, cellular damage ensues. Phagocytes normally make free radicals to kill foreign invaders, but in autoimmune disease or with chronic irritation the free radicals destroy normal tissue. Some toxic herbicides and industrial chemicals, carbon tetrachloride (CCl_4) being a classic example, elicit the production of free radicals. Tissue injury is a major cause of oxidative stress, as emphasized later, and a deficiency of such antioxidants as vitamin E also produces oxidative stress.[1,2]

The reason atmospheric oxygen (20%) does not kill us promptly, even though it wants 4 electrons to fill outer electron orbitals, is that two of its electrons spin in the same direction.[2] This spin restriction may be likened to a mechanic with two right hands. For this reason oxygen is referred to as a diradical. Some enzymes overcome this spin restriction by using one atom of oxygen at a time to oxidize nutrients, etc. When molecular oxygen accidently picks up a compatible electron, it too overcomes the spin restriction by now having only

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one (unpaired) electron to match the spin of another substance like hydrogen. Superoxide is negatively charged (16 protons, 17 electrons), but its negative charge impedes passage through membranes, thereby reducing the destructive power of the free radical. In contrast, the OH· (9 protons, 9 electrons) is a free radical (unpaired electron) without a charge. It thus promptly abstracts hydrogen from DNA and other substances to form stable H_2O (10 protons, 10 electrons).

Because free radicals by definition contain unpaired (imbalanced) electrons, they are paramagnetic, and their presence may be detected in organs or fluids by expensive electron spin traps. Some dyes like nitroblue tetrazolium change color in the presence of superoxide, and the OH· radical may be detected by using salicylate to yield a specific extractable compound. Some investigators identify free radical activity by measuring the consumption of antioxidants like vitamins C and E. Uric acid may be used to detect the activity of xanthine oxidase, a source of superoxide and H_2O_2 in some tissues. Regardless of the method, one special finding has been that the rise in free radicals detected early after ischemia or trauma may wane within the hour, yet neuronal and cell membrane damage continue for 12 to 48 hours or more. This amplification and continuation of cell damage is attributed to lipid peroxidation initiated by the free radicals, and is often referred to as secondary injury. The secondary injury is amenable to antioxidant therapy. It is the reason methylprednisolone is given as soon as possible after spinal injury. Aldehydes are always a byproduct of lipid peroxidation, and malondialdehyde is one indicative of this secondary injury.

Normal and Abnormal Sources of Free Radicals

As previously mentioned, a common source of superoxide results from an incidental abstraction of an electron during cellular metabolism. As shown in Fig. 1, this free radical is converted to H_2O_2 by the enzyme superoxide dismutase (SOD). Then catalase (CAT) or glutathione peroxidase (GSHPx) converts H_2O_2 to harmless water. GSHPx does this by transferring hydrogens from the peptide glutathione. The latter is enzymatically reduced (hydrogens come from NADPH) to complete a cycle (Fig. 1). GSHPx has a higher affinity for H_2O_2 than CAT and is found almost exclusively in some cells (e.g., brain). Unlike CAT, it will cleave lipid hydroperoxyl groups (LOOH) to yield water molecules.[3]

Another normal source of superoxide is associated with activated phagocytes (neutrophils, macrophage, etc.) that contain the enzymes NADPH-dependent superoxide synthetase (Fig. 1), which makes superoxide, and myeloperoxidase, which makes hypochlorous acid (HOCl) designed to kill invading organisms.[2]

Monoamine oxidase (A or B) metabolizes biogenic amines (e.g., dopamine and serotonin) and produces H_2O_2. For example, dopamine + H_2O + O_2 → dihydroxyphenylacetic acid (DOPAC) + NH_3 + H_2O_2.[4] It is believed that H_2O_2 plays a central role in the pathogenesis of Parkinsonism, via the Fenton (iron) reaction discussed later. In this regard, the hazardous compound MPTP is converted by MAO-B in the substantia nigra to the free radical MPP· which instantaneously produces severe Parkinsonism.

Arachidonic acid (AA) is an abundant constituent of phospholipids, and therefore part of all cell membranes. The four double bonds of AA (C20:4) add much to the flexibility or fluidity of cell membranes, though even stearic acid (C18) has mobility within the membrane. Cholesterol is present between such fatty acids to add some rigidity to the membrane. Steroids and tirilazad resemble cholesterol in structure, and one therapeutic effect of these drugs seems to be to strengthen the cell membrane under attack. Vitamin E is also intercalated between the membrane fatty acids, and it, as well as cholesterol and tirilazad, are known antioxidants.[5] Although AA is part of the cell structure, it also serves as the precursor of the eicosanoids (prostaglandins,

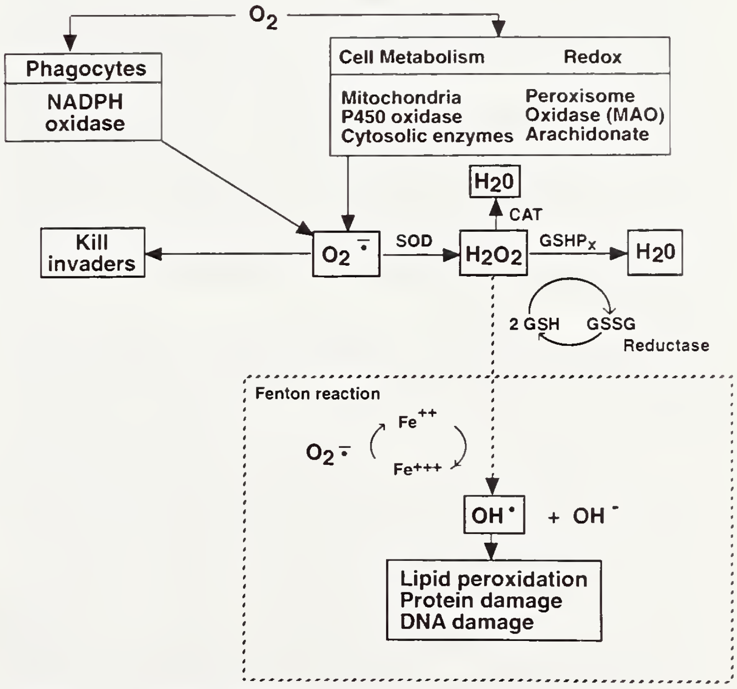

Figure 1. Sources of activated oxygen species. Broken lines encompass pathological phenomena only. Solid arrows represent common phenomena. Oxidase(s) may produce H_2O_2 directly. Scavenger enzymes are superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GSHPx).

thromboxane, and leukotrienes). The eicosanoids serve important functions, and each tissue preferentially makes specific ones, depending on the enzymes present. What is common to all cells, however, is that intermediate products of AA metabolism yield free radicals (Fig. 2). This metabolism plays a pivotal role in the neuronal injury of ischemia and trauma.[5]

When calcium levels rise in cells, the enzyme phospholipase A_2 is activated, freeing AA from the cell membrane. Cyclooxgenase or lipoxygenase then add oxygen to AA to form the intermediate metabolites prostaglandin G_2 (PGG_2) and hydroperoxyleicosatetraenoic acid (HPETE or HPAA), respectively (Fig. 2). These intermediate substances are lipid peroxides (LOOH), which normally lose an atom of oxygen to form LOH. In the process, H_2O is formed by a single electron transfer from the hydrogen donors NADH and NADPH. NAD or NADP then have an extra electron that may be picked up by O_2 to form superoxide.[6] Moreover, in the presence of iron, destructive free radicals from LOOH may form in a manner analogous to hydrogen peroxide (HOOH), as emphasized later.

Xanthine oxidase activity represents a special source of free radicals as it metabolizes either hypoxanthine or xanthine to form $O_2^{\bar{\cdot}}$ (and H_2O_2). Some tissue (e.g., blood vessels, liver), but not all (brain), contain this enzyme. Cell injury (ischemia, trauma), which always leads to an influx of calcium, converts an abundant enzyme, xanthine dehydrogenase, to the oxidase (via calcium-dependent proteases). The calcium also damages mitochondria (which swell), and adenosine is not normally converted to the high energy adenosine triphosphate (ATP). The unused adenosine eventually become hypoxanthine or xanthine whose metabolism by xanthine oxidase generates superoxide. In such cells, inhibitors (allopurinol) or SOD will markedly reduce total injury that would result from the initial assault.[7]

Reduced iron (Fe^{++}) will profoundly magnify cell damage by yielding an electron to H_2O_2 to produce the OH· radical (Fig. 1). After conveying the electron, oxidized iron Fe^{+++} can be recharged (reduced) by an electron donor such as superoxide ($O_2^{\bar{\cdot}}$) to repeat the processes (Fig. 1). The role Fe^{++} plays in producing OH· is often referred to as the Fenton reaction. There is no normal mechanism to counteract the OH· radical, which accounts, in part, for its destructive nature. Iron is normally stored (ferritin) in all cells and transported in plasma in the harmless oxidized state. However, acidosis and superoxide can release the stored iron to participate in the Fenton reaction. Iron storage increases with age, as there is no mechanism to excrete excess iron, and this increase is a potential threat with cellular injury.[4,7] When cells die, iron is released (from ferritin, cytochromes, and other constituents) into the environs to fuel the Fenton reaction. Hemoglobin and myoglobin are other sources of iron for the Fenton reaction. While many enzymes use iron to transfer electrons, free iron is clearly potentially deleterious.

Like iron, Cu^1 is a transition metal (giving and taking an electron easily) that can produce the OH· radical, but it is far less abundant in the body.[2]

Singlet oxygen ($^1O_2$) is produced when sunlight (UV) energy happens to reverse the electron spin of the oxygen diradical, making the molecule more reactive. Its effect is the primary concern of dermatologists, ophthalmologists and botanists, as only insignificant amounts form without sunlight.[2]

Nitric oxide (NO·) is a physiologically important free radical, dilating blood vessels. With superoxide, however, it forms peroxynitrite ($ONOO^-$), which with hydrogen yields destructive radicals, including OH·.

Lipid Peroxidation

Lipid peroxidation explains how one free radical can disappear after cell injury while hundreds of molecules in cell membranes continue to be destroyed hours or days afterward. The OH· radical has been the most implicated as the initiator of lipid peroxidation, which typically requires free iron and H_2O_2 for its generation (Fig. 1). It also comes from Fe^{++} donating its electron to another peroxide (LOOH) present as an intermediate in AA metabolism (Fig. 2). In any case, the OH· radical removes a hydrogen atom from the abundant lipids of membranes to initiate a destructive chain reaction.[1-3,5,7]

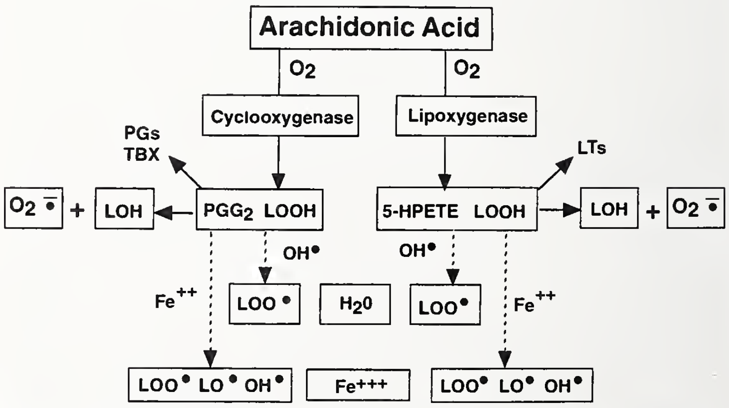

Figure 2. Intermediate metabolites of arachidonic acid as sources of free radicals. Solid arrows represent normal metabolism while broken ones indicate pathological reactions. Hydroxyl radical (OH·) initiates lipid peroxidation and in the presence of iron the intermediates yield many destructive radicals.

The polyunsaturated fatty acids of membrane phospholipids are attacked first because they contain double-bond carbons. It is the methylene group separating two double-bond carbons that is the preferred site of attack.[2]

$CH_2 = CH_2 - CH_2 - CH_2 = CH_2$ (allylic group)

The hydrogen binding on the middle carbon (methylene) is weakened by the huge electron clouds present in the double-bond configuration on each side. Hence, $OH\cdot$ easily removes hydrogen to form H_2O. This leaves behind a carbon of the lipid (L) with one free electron called a central carbon ($L\cdot$) or alkyl radical.

$CH_2 = CH_2 - CH\cdot - CH_2 = CH_2$ (alkyl radical at dot)

The molecule rearranges to form the more stable diene configuration in a shift of the double bond and relocation of $L\cdot$ as follows.

$CH\cdot - CH_2 = CH_2 - CH_2 = CH_2$ (diene group)

The new central carbon could combine with another one to form a C-C bond but the ever-abundant oxygen, eager for electrons, avidly attacks the central carbon.

$L\cdot + O_2 \rightarrow LOO\cdot$ (peroxyl radical)

The peroxyl radical has overcome the electron spin restriction of ordinary oxygen and easily removes a hydrogen from adjacent fatty acids to form the lipid hydroperoxyl radical (LOOH). But in doing so it forms another central carbon (free radical).

$LOO\cdot + LH \rightarrow LOOH + L\cdot$

This chain reaction is self-perpetuating, and as the membrane breaks up, dienes, aldehydes, and other debris become evident. Moreover, the very active peroxyl radical ($LOO\cdot$) may destroy membrane proteins (receptors etc.), as will the aldehydes of the debris.

Lipid peroxidation will stop when the substrate is depleted, if free radicals join to form stable compounds, or when antioxidants donate a hydrogen to the free radical, like $LOO\cdot + H\cdot \rightarrow LOOH$.

The Brain Waiting for Oxidative Stress

The brain constitutes 2% of body weight, consumes 20% of body oxygen, and is 10% by weight fat, mostly phospholipids containing unsaturated (double-bond) fats. The unsaturated fatty acids together with high metabolism, high concentrations of iron in metabolic enzymes and stored as ferritin, and the absence of CAT are potentially dangerous. Hemorrhage and cell death of injury adds to the pool of iron to fuel the generation of $OH\cdot$ by the Fenton reaction. Cerebral vessels also contain the potentially dangerous xanthine oxidase.

While the brain contains SOD, it has only modest amounts of GSHPx (to remove peroxide groups) and modest amounts of vitamin E. However, the brain is loaded with vitamin C, with CSF concentrations being tenfold that of plasma and even higher amounts are present within neurons (via active transport). Lipophilic vitamin E is the most important endogenous inhibitor of lipid peroxidation, and the job of aqueous vitamin C is to donate an electron to recharge oxidized vitamin E. Nevertheless, the modest amounts of vitamin E and GSHPx present place the nervous system in peril.[8] Increasing plasma levels of vitamin E result in a very slow limited rise in brain levels.[9] Therapeutic antioxidants like tirilazad are lipophilic, and are essentially fast-acting substitutes for the vitamin.[9]

Summary of Natural and Therapeutic Defense Mechanisms

Some plasma proteins are specifically designed to fight free radical formation. Transferrin carries iron only in the harmless oxidized state, and ceruloplasmin (MW=169,000) carries both copper and iron likewise. Plasma proteins act as antioxidants, donating electrons, and albumin (MW=69,000) is abundant in interstitial spaces. Circulating proteins may, therefore, reduce the spread of free radicals.[2]

SOD is the first enzymatic line of defense in cells, converting $O_2^{\cdot-}$ to H_2O_2. The H_2O_2 is removed by either CAT or GSHPx (Fig. 1). In most cells, iron is present either as part of an enzyme or as stored oxidized. Many experiments have shown that secondary cellular injury may be prevented by administering either SOD, CAT, or iron chelators (deferoxamine). Any one of these treatments would prevent the formation of the $OH\cdot$ radical (Fig. 1).

Where xanthine oxidase activity plays a role in cell damage (e.g., intestine, canine heart), its inhibition with drugs such as allopurinol has been proven to reduce secondary injury.[7] Also, inhibitors of AA metabolism (e.g., ibuprofen) prevent much cell damage, as in trauma, by reducing free radical generation (Fig. 2). In many experiments, the type of inhibitor that is effective in preventing or reducing cell injury is used to indirectly identify the source of free radicals.

The list of naturally occurring hydrogen donors (antioxidants) that could halt the destructive chain-reaction of lipid peroxidation is long.[1,2,8,10] It includes vitamin E (alpha-tocopherol), vitamin C (ascorbic acid), beta-carotene (essentially two molecules of vitamin A), vitamin A, cholesterol, methionine, glutathione, uric acid, histidine, etc. Vitamin E appears to be especially designed for this purpose, situated as it is in cell membranes and even present (2.6%) in low density lipoproteins (LDL).[9,10]

Many synthetic compounds, including barbiturates, mannitol, dimethylsulfoxide (DMSO), and dimethylthiourea (DMTU), are listed as antioxidants. However, the 21-aminosteroids (e.g., tirilazad) were specifically designed to scavenge OH· and LOO· radicals in a manner similar to that of vitamin E.[5,9] These proved to be effective in laboratory experiments, were given the family name Lazaroid, and are currently being tested clinically. If the basic data are correct, such drugs will reduce the lipid peroxidation that amplifies the damage caused by the initial insult to cells, to the benefit of patients. ❑

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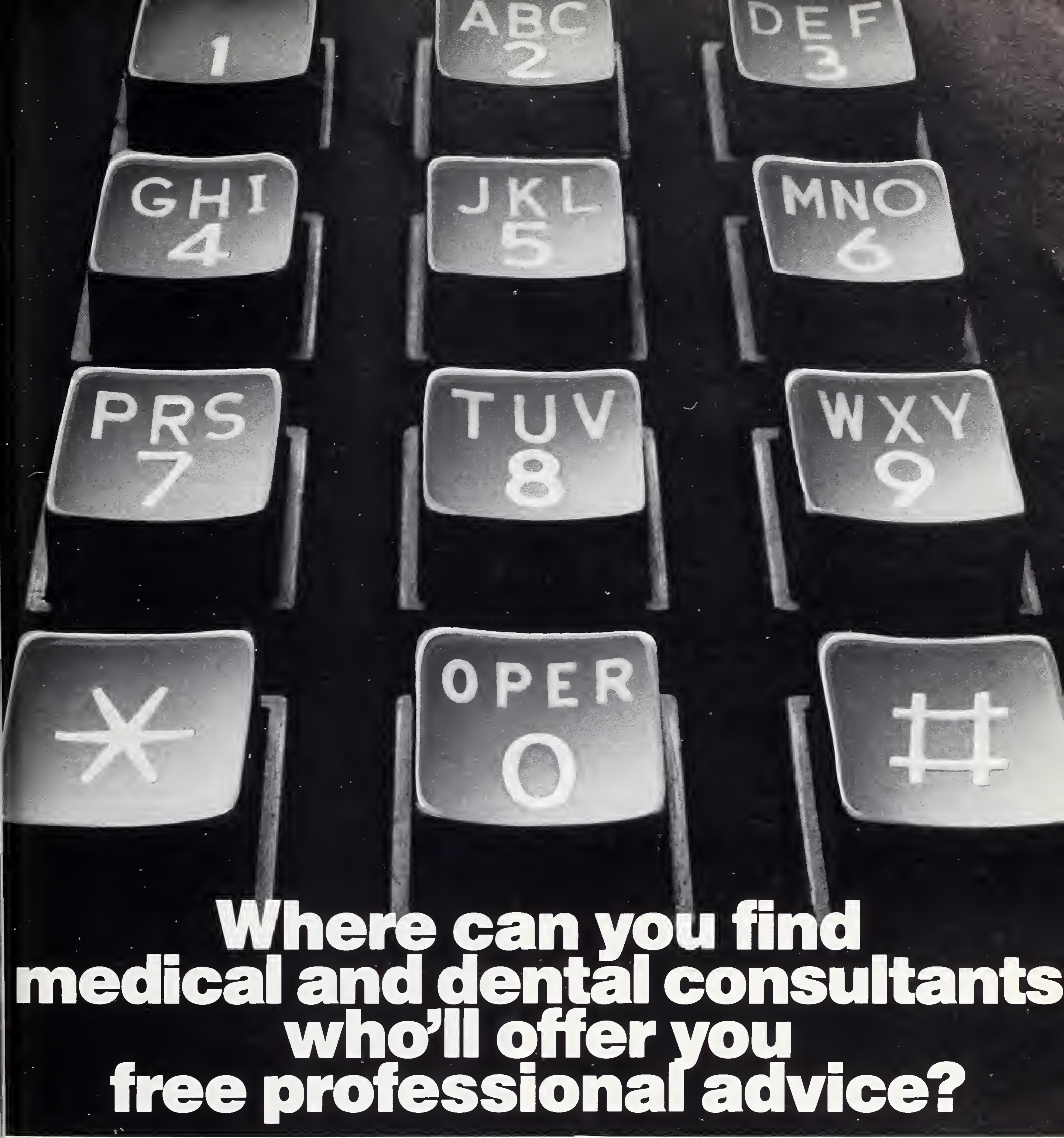
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A Patient With End-Stage Renal Disease and a Neck Mass

Case Report

A 53-year-old man with end-stage renal disease resulting from poorly controlled hypertension had been followed by the nephrology service at the Nashville Veterans Administration Medical Center for several years and was maintained on peritoneal dialysis. He had received two kidney transplants in the past, but both had been lost. He had severe secondary hyperparathyroidism from chronic hyperphosphatemia, and he was often poorly compliant with his medications.

The patient presented himself to the Nashville VA Medical Center complaining of a "painful node" on the back of his neck for the preceding three months. He denied any recent trauma to this area as well as fever, chills, or other systemic symptoms. He also denied any muscle weakness, paresthesia, or bowel or bladder incontinence. On physical examination he was thin but otherwise appeared well. His blood pressure, pulse, and temperature were normal. Examination of the neck revealed a firm 1- to 2-cm mass on the posterior neck in the midline overlying the cervical spine. There were no enlarged lymph nodes. His neurologic examination showed intact motor and sensory function with symmetric deep tendon reflexes. Laboratory studies were unchanged from baseline values. This included a blood urea nitrogen of 54 mg/dl, serum creatinine 15 mg/dl, serum calcium 9.7 mg/dl, and serum phosphorus 5.2 mg/dl.

Plain radiographs of the cervical spine are shown in Fig. 1. These revealed almost complete obliteration of the C3 vertebral body. There was a marked angulation between C2 and C4, with the C4 vertebra lying in a transverse position with respect to C2. Magnetic resonance imaging demonstrated the bony abnormalities as previously seen but without evidence of spinal cord compression. The patient was placed in a cervical spine immobilization collar. A subsequent subtotal parathyroidectomy revealed marked glandular hyperplasia. Cervical spine stabilization surgery is planned, and the patient continues to do well.

Discussion

Abnormalities of bone frequently occur in patients with end-stage and chronic renal disease. Several processes have been found to be responsible for the varied skeletal disorders seen in these patients. The most common abnormality of bone in this patient population is osteitis fibrosa, a term that describes the histologic pattern of change of skeletal tissue due to long-standing secondary hyperparathyroidism. As a result of poor renal clearance of phosphorus, patients with chronic and end-stage renal disease invariably become hyperphosphatemic. Elevated phosphate levels indirectly result in hyperparathyroidism by lowering serum calcium. Persistently elevated parathyroid hormone levels cause active bone formation and remodeling. This condition is often readily diagnosed by the presence of hyperphosphatemia and hypercalcemia with an elevated parathyroid hormone level, an increased alkaline phosphatase, and radiologic evidence of subperiosteal bone resorption.[1] Secondary hyperparathyroidism can be prevented by adequate control of the serum phosphate with dietary phosphorus restriction and oral phosphate-binding antacids.[2]

Osteomalacia is another common form of bone disease found in people with renal failure. In contrast to the active bone remodelling in osteitis fibrosa, osteomalacia is identified pathophysiologically by low bone activity. This can be confirmed by radionuclide bone scanning. The most commonly identified causes of this condition include aluminum toxicity, resulting from aluminum present in phosphate-binders as well as in some dialysis fluids, and by 1,25-dihydroxy-vitamin

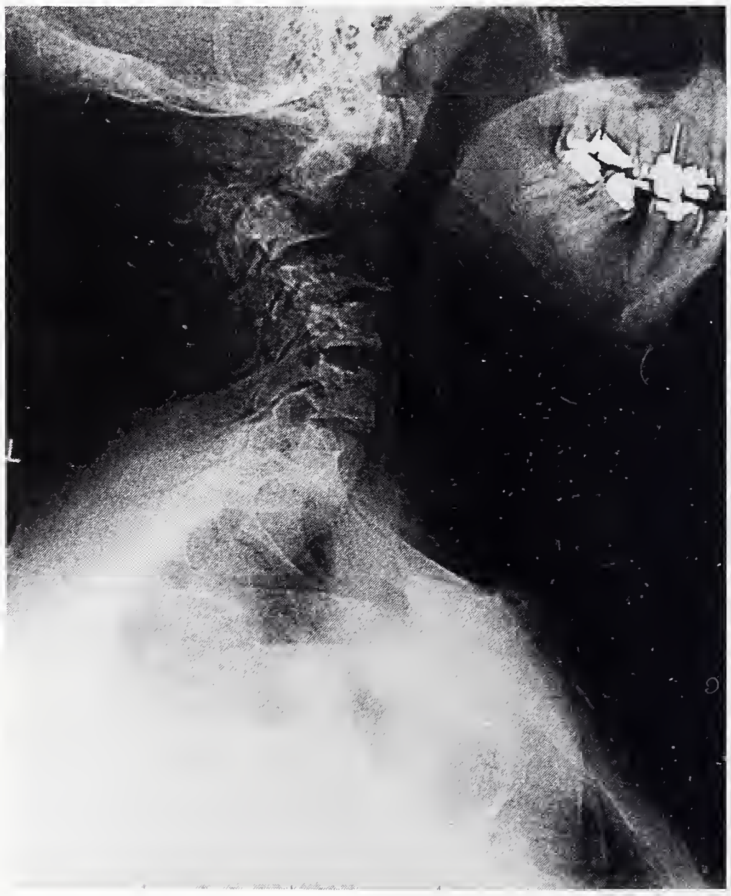

Figure 1. Lateral radiograph of the cervical spine.

Presented by J. Andrew Alspaugh, M.D., chief medical resident, Nashville VA Medical Center.

D deficiency. Aplastic bone disease, often considered the most severe form of osteomalacia, is often associated with significant aluminum toxicity. The use of vitamin D supplements and non-aluminum-containing phosphate-binders, as well as the removal of aluminum from dialysate water, has dramatically reduced the incidence and severity of osteomalacia in patients with kidney disease.[1]

In addition to the effects of secondary hyperparathyroidism, this case report also probably represents a particular form of bone disease involving the axial skeleton seen in patients on hemodialysis and long-term peritoneal dialysis. This destructive spondyloarthropathy is caused by the deposition of an amyloid-like substance in the bone, leading to pathologic fractures.[1,3,4] Carpal tunnel syndrome may also be present in this condition as a result of the periarticular deposition of amyloid. Biochemical analysis of the amyloid material in this form of dialysis-related bone disease revealed it to consist of beta$_2$-microglobulin. This molecule, a component of the class I major histocompatibility complex, is produced throughout the body in large quantities. In a normally functioning kidney, it is filtered and then degraded and reabsorbed as its component amino acids. However, this molecule is poorly filtered with hemodialysis and thereby deposits in tissue. Its deposition in bone affects the underlying integrity and supportive strength. Fractures of the axial skeleton unfortunately commonly result.[1,3,4]

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Post-Transfusion Purpura

Case Report

A 61-year-old woman was admitted to Vanderbilt Hospital for treatment of multiple injuries sustained in a motor vehicle crash. On arrival to the emergency room, she had compound fractures of both femurs and the right humerus. Vital signs were stable. Her hematocrit was 29%, and platelets were 300,000/cu mm. She was administered two units of packed red cells, intravenous cephalexin, and gentamicin. The patient was taken to the operating room where reduction and fixation of her fractures were performed. She was moved to the surgical intensive care unit in stable condition. Five days later, her platelet count decreased to 5,000/cu mm. There were widespread petechiae, purpura, and she was bleeding from the wounds. The hematocrit fell to 19% despite repeated transfusions. Platelets remained 1,000 to 2,000/cu mm despite multiple transfusions of platelets. CT scan of the abdomen revealed no source of bleeding. A hematology consultation was obtained.

The patient had always been healthy. She had two children delivered without complication. She was taking no medications prior to her injuries; at Vanderbilt Hospital her medications included cephalexin and famotidine. She had no allergies, and there was no history of previous transfusions.

At the time of consultation, examination revealed a woman with petechiae, purpura, and oozing from multiple sites. Her temperature was 100°F, blood pressure 130/80 mm Hg, and heart rate 100/min. The remainder of her examination was unremarkable. Pulses were palpable. Laboratory studies at that time revealed normal electrolytes, PT/PTT = 1.1/34 sec, WBC count 16,000/cu mm, hematocrit 22%, platelets 1,000/cu mm, fibrin split products 1:2, and normal d-dimer.

She was thought to be suffering from post-transfusion purpura, but her hemodynamic status was too unstable to allow plasma exchange. Treatment consisted of intravenous steroids and intravenous immune globulin. The platelet count did not increase, and she continued to bleed. Subsequently she was given two four-liter plasma exchanges, and by the 12th hospital day her platelet count had increased to 20,000/cu mm. Her hematocrit was stable. The remainder of her hospital stay was without incident.

Discussion

Post-transfusion purpura (PTP) is a rare disorder, the exact pathogenesis of which is not understood.[1] It occurs in individuals who lack a specific platelet antigen, Pl^{A1}, when exposed to platelets, packed red cells, fresh frozen plasma, or whole blood from donors who have this antigen. A previous exposure to Pl^{A1}, through transfusion or pregnancy, is required for subsequent thrombocytopenia to develop; this explains the relative preponderance of cases in women. Most of those afflicted have no prior history of transfusion and, as in this patient, are thought to have been exposed during pregnancy. The Pl^{A1}-negative phenotype has a prevalence of about 2% in the general population.[2] Rarely, other platelet antigens have been implicated.

PTP typically develops 5 to 12 days after transfusion. Platelets may fall from normal range to fewer than 10,000 in as little as 12 hours. An early clue to the potential development of PTP is recurrent, rela-

(Continued on page 63)

Presented by David Heusinkveld, M.D., Hugh J. Morgan chief medical resident, Vanderbilt University Medical Center, Nashville.

Blunt Injury to the Subclavian Artery

JAIME PONCE, M.D. and JAMES V. LEWIS, M.D.

Introduction

Blunt injury to the subclavian artery is uncommon. Its presentation may be subtle and associated with multiple other injuries.[1,2] More liberal utilization of arch arteriography following blunt chest trauma has increased identification of nonpenetrating injuries to the subclavian artery. Delay in diagnosis and difficulties in operative exposure are major factors in its treatment.

Following is a case report and discussion of the management of a blunt injury to the subclavian artery associated with multiple fractures over the shoulder and upper chest area.

Case Report

A 35-year-old man, involved in a motor vehicle crash, was brought to the emergency room complaining of right shoulder pain. He was alert, with stable vital signs. Physical examination revealed a tender contusion over the right clavicle. The right brachial, ulnar, and radial pulses were diminished, but function and sensation in the right upper extremity were intact.

X-rays showed fractures of the lateral third of the right clavicle (Fig. 1), right scapula, first, second and third ribs on the right, and a compression fracture of the 11th thoracic vertebral body. The patient also had a right pneumothorax. An arteriogram demonstrated occlusion of the second portion of the subclavian artery (Fig. 2).

The patient was immediately taken to the operating room and explored through a supraclavicular incision. An intimal dissection was noted in the midportion of the subclavian artery adjacent to the clavicular fracture. The artery was re-

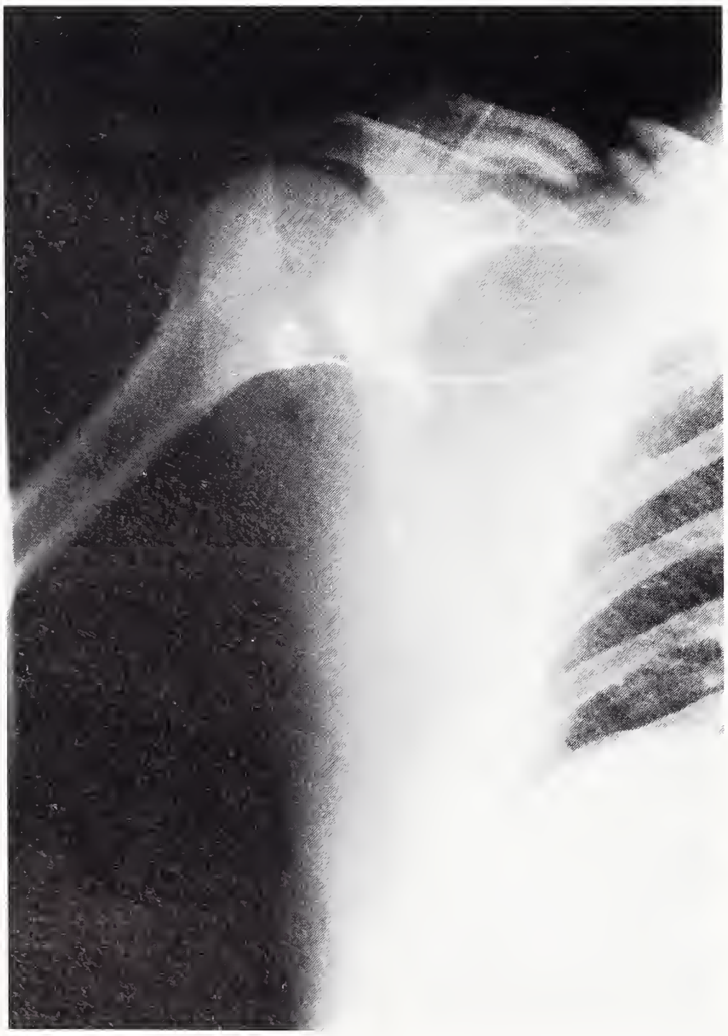

Figure 1. Plain x-ray demonstrating a fracture of the midportion of the right clavicle.

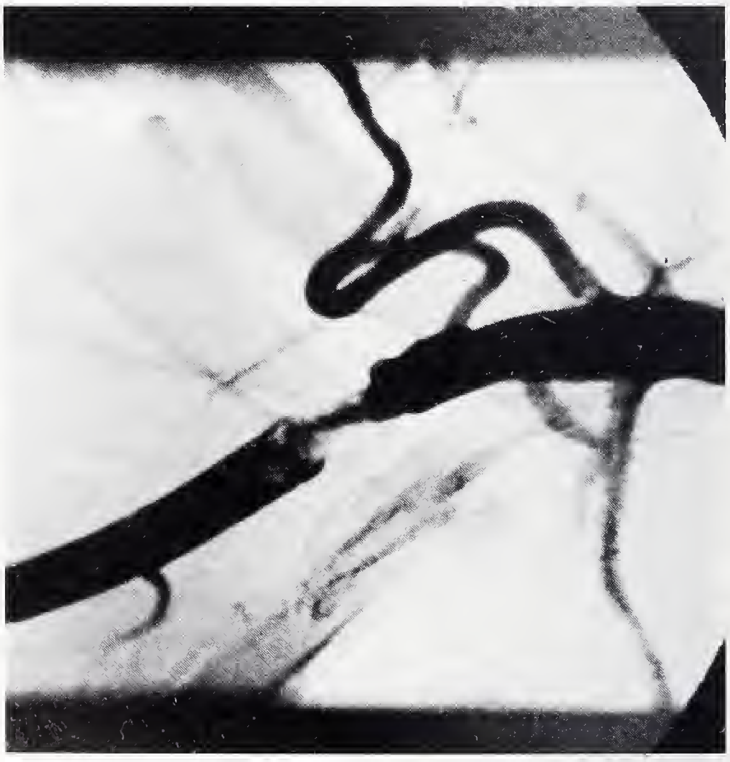

Figure 2. An arch aortogram of the right subclavian artery demonstrating almost complete occlusion in the area of the previously demonstrated clavicular fracture.

From the Department of Surgery, James H. Quillen College of Medicine, East Tennessee State University, Johnson City, and the Trauma Service, Holston Valley Hospital, Kingsport.

paired with a reverse saphenous vein interposition graft, after which the patient had excellent pulses in his right upper extremity. His clavicular fracture was treated with a sling, and he was discharged on the ninth hospital day.

Discussion

Subclavian artery injuries are rare, representing only 1% to 2% of all acute vascular injuries. The majority of injuries to the artery are penetrating, with only 2% to 3% of the total associated with blunt trauma.[3] The mechanisms of blunt injury include compression or contusion of the artery from a direct blow, avulsion or traction injury from stretch or rotational stress, and laceration from fractures of the adjacent ribs or clavicle.[3,4]

Clavicular fractures can directly lacerate the underlying subclavian artery to produce a traumatic false aneurysm.[4] Patients with subclavian artery injury may have severely ischemic upper extremities, though because of the extensive collateral circulation some patients have normal distal pulses. A high index of suspicion is often needed when deciding whether or not to do angiography.[3,5]

The most common injury associated with subclavian artery trauma is fracture of the upper ribs, though both fracture of the clavicle and brachial plexus injury have also been associated with it.[6]

Management of these injuries is surgical in all but very selected cases.[1-6] Trauma to the middle portion of the subclavian artery is best approached through a supraclavicular incision. If the clavicle has been fractured, removal of its medial portion is easy, and may provide improved exposure.

If necessary, proximal control can be obtained on the left side by a left third interspace anterior thoracotomy. On the right side, a median or partial median sternotomy, with or without completing the "book" incision by opening into the fourth intercostal space, may be used. After adequate exposure has been obtained, the injury can be managed either by primary repair or, if this is not possible, by interposition of a graft of saphenous vein or prosthetic material.

Blunt trauma to the area of the subclavian artery can be associated with stretch injuries to the brachial plexus, which frequently cause permanent disability.[4]❑

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(Continued from page 61)

tively severe immediate reactions to transfused blood products. Clearance is mediated by the reticuloendothelial system. Symptomatic thrombocytopenia may last from 1 to 35 days in untreated patients. Rapid recognition and appropriate treatment will dramatically shorten this course.

A moment's reflection will reveal that PTP is more complex than a straightforward antibody-mediated immune clearance of a foreign antigen. Native Pl^{A1}-negative platelets are cleared as rapidly as foreign, Pl^{A1}-positive cells. Furthermore, PTP may be induced by transfusion of washed, packed red cells that contain little if any platelet material. A number of theories have been advanced to explain these disconcerting characteristics, none of which accounts completely for these observations.[1]

Treatment consists of aggressive supportive care with transfusions of platelets and red cells as needed. Adding to the mysteries concerning pathogenesis, continued transfusion of blood products from Pl^{A1}-positive donors does not seem to worsen this condition. Two methods of treatment have been shown promptly to increase platelet counts: intravenous immunoglobulin and plasmapheresis with plasma exchange. Mortality is in the range of 10%, even in those treated aggressively.[2] ❑

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Radiology Case of the Month

Benign Manifestations of Asbestosis

JAYANTH H. KESHAVA MURTHY, M.D. and SHOBHA R. HIREMAGALUR, M.D.

Case Report

The patient is a 70-year-old white man who has a longstanding history of asbestos exposure. Figs. 1 & 2 show the PA and lateral views of his chest x-rays.

What is the finding on the x-ray? The findings on the chest film show pleural plaques and calcification in the plaque due to asbestos exposure.

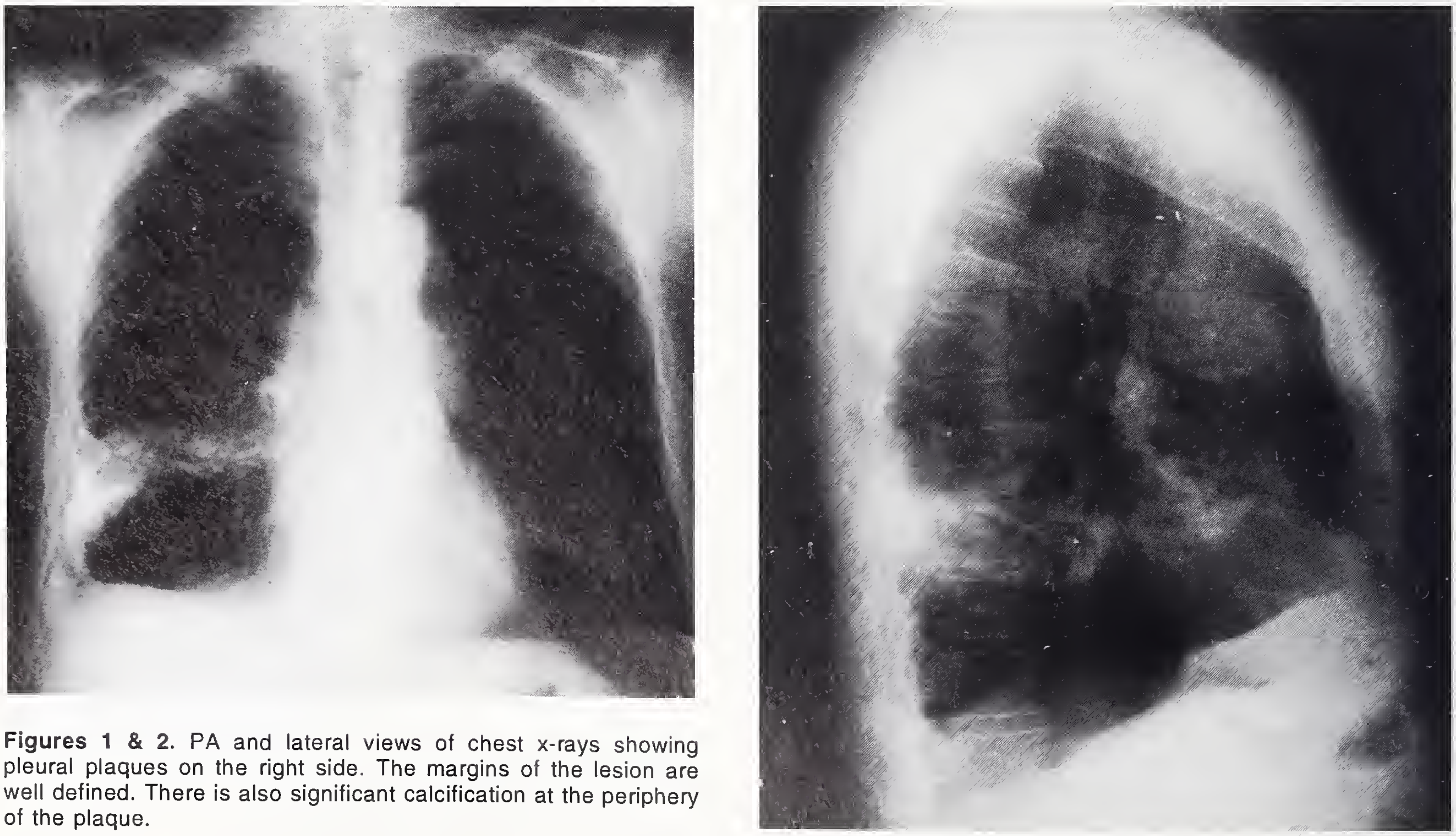
Discussion

Pleural Plaques. These are the most common radiologic features of asbestos exposure. They originate from the parietal pleura and are a well-defined, soft-tissue sheet. They occur after 20 to 30 years of asbestos exposure, and are asymptomatic. Their extent is related to the severity of exposure. They are located posterolaterally along the inferior costal margins and diaphragm, are usually bilateral or left-sided, and may appear punctate, linear, or cake-like.[1]

The plaques, when calcified, form a "holly-leaf" pattern, with sharp, often angulated outlines that follow the margins of the ribs. Though extensive, they are usually less than 10 mm thick and therefore best appreciated when the plaques are tangential to the x-ray beam on the lateral margins of the chest and diaphragmatic surface on the PA radiographs.[2] The rate of plaque detection can be increased by using 45 degree oblique radiographs.

Subpleural fat pads and prominent intercostal muscles can be confused with plaques on plain radiographs. In such instances, computed tomography is more sensitive and more specific.[2]

Pleural Calcification. Pleural calcification associated with asbestosis is more delicate and is bilateral, found frequently over the diaphragm, and located in the parietal pleura. Other causes of calcification may result in a deposit that is a continuous sheet or discrete plaques, producing dense, coarse irregular shadows, often demarcated laterally.[1]



Figures 1 & 2. PA and lateral views of chest x-rays showing pleural plaques on the right side. The margins of the lesion are well defined. There is also significant calcification at the periphery of the plaque.

From the Department of Internal Medicine, James H. Quillen College of Medicine, East Tennessee State University, Johnson City.

Pleural Effusion. Asbestos-related pleural effusions occur unilaterally or bilaterally within 10 to 20 years following exposure, which is earlier than other pleural manifestations. They are benign, exudative, and self-limiting, although they recur in up to 30% of patients.[1] Epler et al[3] noted an incidence of 3.1% of 1,135 asbestos-exposed workers. Pleural effusions are not a risk factor for mesothelioma, but extra caution is advisable if they are found.[4]

Diffuse Pleural Thickening. Mcloud et al[5] define pleural thickening as a smooth, non-interrupted pleural density extending over at least one-fourth of the chest wall. Gamsu et al[6] define it on CT as a continuous sheet of increased density, at least 5 cm broad, 8 to 10 cm long, and more than 3 mm thick. Diffuse thickening involves both parietal and visceral pleura, and may be associated with significant alterations in pulmonary functions.

Round Atelectasis. Round atelectasis is also known as shrinking pleuritis, folded lung, or atelectatic pseudotumor. It appears characteristically as a round or wedge-shaped, sharply defined, pleural-based mass, ranging between 2 and 7 cm in size, situated posteriorly in the lower lobes adjacent to an area of pleural thickening.[1] Air bronchograms may be present. The condition is characteristically associated with vessels and bronchi, which course like a "comet tail" toward the hilum, that forms an acute angle with the pleura. Punctate calcifications may be seen. Round atelectasis most commonly results from pleural fibrosis, but in some cases may result from pleural effusion. The earliest manifestation may be the development of "crow's feet." The other causes of round atelectasis include trauma, pleural exudate, histoplasmosis, or any process that causes extensive pleural fibrosis.

In conclusion, CT scans are significantly more sensitive than plain radiographs in the detection of asbestosis-related pleural diseases. ☐

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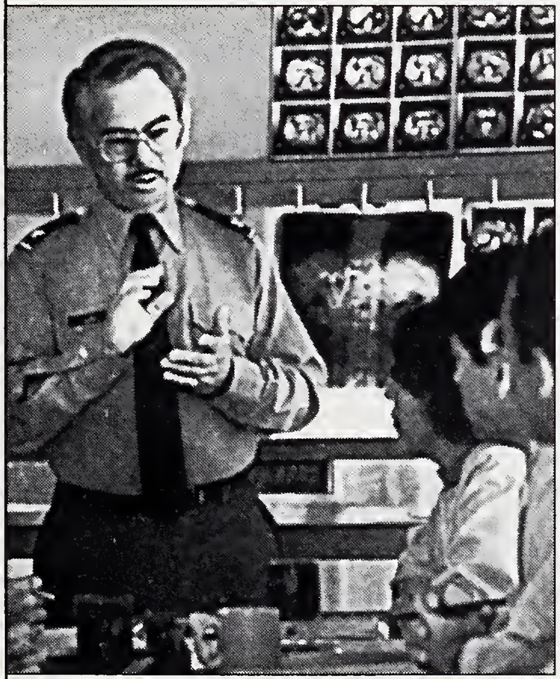

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Dodson Corner

Asleep at the Wheel: Fatigue Usually Wins With Deadly Results

TERRI MARSHALL

Studies show that we spend approximately one-third of our lives sleeping. While the driver's seat obviously is no place for napping, few people may realize how pervasive and threatening driver fatigue is on today's roadways.

Falling asleep at the wheel is an important factor in 200,000 vehicular accidents and approximately 3% of vehicular deaths each year, according to the U.S. Department of Transportation. In her article "Forgotten Menace on Our Highways," *(Reader's Digest,* June 1994) author Mandy Matson suggests that sleep deprivation should be viewed with the same seriousness as drunk driving.

Sleep can overtake a fatigued driver without warning, regardless of where the driver is going or how long he or she has been on the road. This is because everyone's body develops its own sleep/wake pattern in each 24-hour period, according to Ms. Matson. "Once this biological clock is set, your body may respond—whether or not sleep fits into your plans."

Most accidents involving drivers who fall asleep at the wheel occur between midnight and 7 AM, when most people are asleep. These accidents pick up again from 1 to 4 PM, when many of us begin to feel sluggish.

Ms. Matson offers the following tips to ensure a safe, sleepless drive:

- **Get plenty of sleep nightly.** Try to get at least eight hours of sleep a night. If you can't get that much, play catch-up on the weekends. This will help you ward off your biological clock's need for sleep.
- **Take breaks.** Stop at least every two hours on long trips. Stretch or exercise. Avoid heavy meals and too much caffeine. If possible, switch drivers frequently.
- **Stay alert.** Avoid driving a car full of sleeping passengers. A "designated companion" should stay awake to help keep you alert.
- **Don't get too comfortable.** This is not an easy task today with cars built for maximum driver comfort. Forget the cruise control. Open the windows for maximum alertness.
- **Don't drink.** Fatigue intensifies the intoxicating effects of alcohol.
- **Stop driving.** Get off the road at the first sign of drowsiness. At night, get off the highway completely. Pulling onto the shoulder invites rear-end collisions, as drunken and fatigued drivers often crash into stopped cars after following the taillights of the car ahead of them.

If you must pull off the road, don't let fatigue cloud your judgment. Always use caution and keep safety in mind when choosing a rest area. ❑

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Loss Prevention Case of the Month

Surgeon or System—Malpractice

J. KELLEY AVERY, M.D.

Case Report

A 62-year-old woman came to the emergency department shortly after midnight with severe right flank pain that radiated anteriorly and inferiorly into the area of the right groin. Her blood pressure was 180/110 mm Hg, she had tenderness to percussion over the right flank, and her urine showed a 2+ protein. On the basis of the typical history and physical findings, the urologist on call ordered a stat IVP, which showed a slight hydroureter on the right and what appeared to be a calculus in the region of the right ureterovesical (UV) junction.

Narcotics by injection gave some relief from her pain, and she was sent home, with instructions to see the urologist the following morning in his office. She kept the appointment, and on cystoscopy a calculus was found at the UV junction. A conservative approach was tried in hopes that the stone would pass without intervention, but five days later the stone had not moved, and the patient was experiencing intermittent severe right flank pain. She was therefore scheduled to have a cystoscopy and attempted extraction of the calculus as an outpatient.

The anesthesiologist requested by the urologist was scheduled to give the anesthesia, but he was occupied with another case at the time and another anesthesiologist was assigned to manage her case. She was assessed by the anesthesiologist in the holding area, who noted the history of hypertension and recorded the blood pressure as 180/100 mm Hg. A history of allergy to chloramphenicol was noted, along with loose teeth, poor oral hygiene, and exogenous obesity. Her weight was 178 lb that morning and her estimated height was about 60 in. No notation was made about her neck, nor was there any history of previous problems with anesthesia. On the basis of these findings, an ASA classification of 2 was assigned.

Anesthesia was started and the patient was intubated at about 11:50 AM. Almost immediately her blood pressure began to rise to 220/100, 248/114, and 230/105 mm Hg. Bradycardia occurred within a minute or two. The code team was called to the operating room five minutes after the intubation, arriving five minutes later. The anesthesiologist checked the endotracheal (ET) tube, and hearing breath sounds over both sides of the chest, concluded that the tube was in place. The first blood gas analysis was done 15 minutes into the procedure, and showed a Po_2 of 19, with severe acidosis. About 22 minutes into the case the patient was re-intubated and was given 100% O_2 by Ambue bag. Another 20 minutes elapsed before the Po_2 was recorded as above 60. Active CPR was begun approximately 15 minutes into the procedure and continued for 30 minutes before an adequate heart rate was obtained and the blood pressure was about 110/70 mm Hg.

She had sustained a devastating period of hypoxia, which resulted in severe brain damage. After three days in the SICU, a bedside EEG reported no brain activity. She was declared brain dead, and all supportive measures stopped. She died a few minutes later. A lawsuit was filed charging both the urologist and the anesthesiologist with negligence in failing to identify esophageal intubation in a timely manner. The suit also requested punitive damages because the anesthesiologist left the room during resuscitation, showing a "callous disregard for his patient's welfare."

Loss Prevention Comments

There is a risk to general anesthesia that is not proportional to the severity of the procedure for which the anesthesia is given. The devastating effects of esophageal intubation are well known, and before we had the ability to continuously monitor Co_2 and O_2 it was more common than it is today.

This case occurred after such monitoring of gases had become the standard of care, and had, in fact, resulted in a gradual reduction in the premiums for the anesthesiologist's professional liability insurance. In the examination of this case, it was found that Co_2 was not being monitored, and the ET tube was not equipped with the device that would have immediately warned the anesthesiologist of trouble. Investigation revealed that the device was defective and was being repaired.

Surely in the absence of such a monitoring device the physician could have been expected to more closely observe his patient and more quickly react to signs of trouble. Inflaming the surviving family's anger at the caregivers was the impression that neither the urologist nor the anesthesiologist was actively involved in the effort to protect their patient either by the earlier recognition of trouble immediately after intubation or during CPR once the cause of the trouble had been discovered. There was testimony that the anesthesiologist left the room during CPR.

The anesthesiologist relied on the questionable observation of breath sounds on both sides of the chest to delay his attempts to re-intubate. It was not until about 20 minutes into the case that the patient was adequately oxygenated. There was also the significant obesity and a long history of hypertension that made the patient a less than ideal anesthesia risk.

The absence of the necessary monitoring device was evidence of system laxity, which contributed to the constellation of difficulties that contributed to this anesthesia death. Why was the monitoring device not functional? Why did not the physicians delay the case until appropriate monitoring was available? Questions related to these system problems went without satisfactory answers, and a very large settlement was required to protect against the possibility of a much larger award by the jury for punitive damages. ☐

Dr. Avery is chairman of the Loss Prevention Committee, State Volunteer Mutual Insurance Company, Brentwood.

The Case of the Month is taken from actual Tennessee closed claims. An attempt is made to fictionalize the material in order to make it less easy to identify. If you recognize your own case, please be assured that it is presented solely for the purpose of emphasizing the issues presented.

Department of Health Report

School Days, School Days . . . Those Not So Healthy School Days

MARILYN R. ONTIVEROS, R.N., M.N. and BRENDA J. FOWINKLE, R.N., M.S.N., M.Ed.

Traditionally, school-aged children and youth are considered one of the healthiest segments of our population, but are they? Data indicate that this group has a significant number of both existing and potential health problems. In today's atmosphere of health and education reform, how can this situation be improved? This challenge faces all of us who are concerned with the well-being of our children and youth.

Comprehensive school health programs and school-based health centers provide a promising approach: The Tennessee Department of Health (TDH) has established primary goals for healthier children by the year 2000 that would improve access to appropriate health services and promote healthy lifestyles. Specific objectives include the implementation of a comprehensive school health education program throughout the state, the placement of more school nurses, and an increase in school health services that are reimbursed by TennCare and other potential funding sources. In January 1994, Tennessee was one of the states that received a $100,000, 15-month planning grant from the Robert Wood Johnson Foundation in conjunction with the Foundation's new initiative, "Making the Grade: State and Local Partnerships to Establish School-Based Health Centers." The TDH has been designated the lead agency in this effort to expand the potential for school-based health centers to be developed across the state.

The TDH, in cooperation with the Tennessee Department of Education, has conducted the Centers for Disease Control and Prevention's Youth Risk Behavior Survey of public high school students for the past three years. The results of the most recent survey, completed in 1993, clearly show that Tennessee's students are practicing high-risk behavior. For example, the most common age of first use of alcohol was 13 to 14 years of age, and 28.1% of high school students reported having had five or more drinks in a row on at least one occasion in the past 30 days. Other examples of risky behavior among these high school students are: 35.2% reported smoking cigarettes in the past 30 days, 24.5% reported thinking seriously about attempting suicide, 14 years of age was the most frequently reported age of first intercourse, 39.7% of sexually active students reported four or more partners in their lifetime, and 52.6% of male students reported carrying a weapon, gun, knife, or club during the past 30 days. In addition to risk-taking behavior, which can have a lasting impact, adolescents have a significant number of active health problems. Nationally, one out of five adolescents has at least one serious health problem.[1]

Having an impact on the health of school-aged children and youth can be difficult. A number of barriers exist that prevent children and youth from receiving quality health care. First, health insurance for individuals in this age group may be nonexistent because their families are without either private or public third party coverage. Second, existing insurance may be inadequate because coverage for primary, routine preventive care and health education interventions aimed at risky behavior are usually lacking. And third, school-aged children and youth have demonstrated poor health care utilization. The reasons for this include inadequate numbers of health care providers, inaccessible hours, a fragmented delivery system, parental attitudes that care is not needed, and lack of transportation and money.

Many of these barriers can be addressed through comprehensive school health programs and school-based health centers. The fundamental relationship between health and education was acknowledged on April 7, 1994 when Richard Riley, U.S. Secretary of Education, and Donna Shalala, U.S. Secretary of Health and Human Services, issued a joint statement on school health. This statement affirmed that, "School health programs support the education process, integrate services for disadvantaged and disabled children, and improve children's health prospects."[2]

Comprehensive school health programs take a holistic approach, which includes eight basic components: health services, health education, a healthful school environment, nutrition, physical education, counseling,

(Continued on page 70)

From the Tennessee Department of Health, Nashville. Ms. Ontiveros is assistant director, Health Promotion/Disease Control; Ms. Fowinkle is project manager, Tennessee Making the Grade.

Who Will Provide Your Income If You Can't Work?

Disability Income Insurance: The Coverage That Works When You Can't

TED MERRILL

Editor's Note: The Tennessee Medical Association is committed to providing its members with the finest benefits and services available. Among those benefits is disability income insurance, important coverage that will provide members with a monthly income in the event they cannot work due to an illness or injury. The Tennessee Medical Association has for many years endorsed the Disability Income Insurance Program from Commercial Life Insurance Company, the nation's leading provider of disability income insurance programs for associations. This article explains the benefits and advantages of this coverage. (See letter to the editor in Mail Box elsewhere in this issue.)

There are routines in almost every physician's practice: patients to see, forms to fill out, procedures/duties to perform. There is also the income you receive. You pay your bills and life goes on. If you miss a week of work due to a short-term illness or a mild injury, you probably have enough funds on hand to cover your missed income. But what if you should suffer a more serious illness, or an injury that keeps you from work for weeks, or months—or even years? How will you manage without the regular income you've come to depend on?

A serious disability can have a devastating effect on your finances. That is why disability income insurance was developed. This important coverage pays you a regular income in the event you cannot work due to an injury or illness. This coverage is so important *it should be considered as carefully as health insurance.* If you become ill, health insurance can pay your medical bills, but it won't pay the mortgage. On the other hand, disability income insurance can help you maintain your household should you become disabled.

According to the statistics, you stand a real chance of needing disability income insurance. If you're over age 45, you stand a greater risk for being disabled for three months or longer than of dying. And the average length of a disability at age 45 is 3.4 years.* What's more, 48% of mortgage foreclosures in the United States result from disabilities.† Without the protection of disability income insurance your entire financial plan could be affected, putting mortgage payments, retirement plan contributions, credit card obligations, and more at risk.

Quality Protection From Your Association

Knowing that disability income insurance is of great value to its members, the Tennessee Medical Association (TMA) is committed to offering a program suited specifically to the needs of physicians, a program superior to many disability insurance plans TMA members could purchase on their own. Commercial Life Insurance Company provides TMA members with this type of highly flexible Disability Income Insurance Program. And by virtue of the TMA membership's considerable buying power, this program serves the unique needs of TMA members with an array of superior benefits as well as contractual and pricing advantages not available on individual plans sold to the general public.

Commercial Life's Disability Income Insurance Program lets you tailor your coverage to your age, income, and financial needs. You can choose the duration of coverage that meets your needs—protection until age 65 or even a lifetime benefit—and you can choose your own waiting period, the period between first becoming disabled and the time when you begin receiving benefits. Younger physicians, who may have limited financial resources in the early stages of their careers, can select a short waiting period to provide quicker protection of their income. Since established physicians often have greater financial resources, they can choose the option of a longer waiting period.

Commercial Life's customized coverage for TMA members also includes "Your Own Specialty" protection, the most preferred form of income protection. It assures that you will receive benefits until you are able to return to the practice/duties of your profession. With the Residual Benefits Option, you can receive benefits even if you are able to return to work on a part-time basis. That means you will have the support of a regu-

---

Mr. Merrill is vice-president, Association Group Sales, Commercial Life Insurance Company.

*Source: 1896 Commissioners Disability Table

†Source: Housing and Home Finance, U.S. Government

lar income as you make the transition back to a full-time work schedule. You also benefit from Commercial Life's "step-rated" premium structure, which provides a lower premium when you are young and higher premiums when you are older and have more disposable income. Unlike "level-rated" disability plans that charge the same annual premium throughout the life of the policy, Commercial Life's preferred step-rated premium structure responds to your changing needs as your career develops.

A Partnership That Benefits You

Commercial Life, a UNUM company, has been serving the insurance needs of associations since 1928 and is recognized as the leading provider of association disability income insurance programs in the United States. Commercial Life is proud to work as a partner with the TMA and its insurance administrator, The TMA Association Insurance Agency, Inc. in providing a Disability Income Insurance Program that incorporates features, benefits, and flexibility designed to meet your needs throughout your professional career. *It is coverage every TMA member should carry because disabling injuries and illnesses happen to thousands of people every year.* Fortunately, this exclusive Disability Income Insurance Program can give you the critical protection you deserve, the protection no professional should be without. ❑

Department of Health Report . . .

(Continued from page 68)

psychological and social services, staff wellness, and parent/community involvement. In a comprehensive program each of these eight components interacts with the other seven and together provide a synergistic effect that benefits both the school-aged population as well as teachers and staff.

School-based health centers, first established about 20 years ago, have grown in numbers to over 400 such centers across the country.[3] Six centers currently operate in Tennessee, four in Memphis and two in Johnson City, located within a school building or on school grounds. They deliver comprehensive care, including a broad range of physical, mental, and social health services. These centers can be found at the elementary, middle, and high school levels. Staffing mix is variable, depending on the needs of the students, but normally can include nurse practitioners, social workers, nutritionists, physicians, dentists, dental hygienists, registered nurses, health educators and/or psychologists. In order for these or any other programs to be successful, they must reach their target population. School-based health centers have demonstrated an ability to reach school-aged children and youth, and, with support, provide effective quality care.

During the planning grant period for "Making the Grade," the TDH is working at both the state and local levels. A state coordinating body with representation from a broad range of individuals and groups concerned with the health and well-being of Tennessee's youth has been formed. This advisory group is helping to develop policies supportive of the delivery of comprehensive primary health services in schools and reducing existing barriers to the establishment of school-based health centers. At the local level, Greene and Warren Counties were selected through a request for proposal process to work in partnership with the grant office to lay the groundwork necessary to promote the concept and acceptance of school-based health centers. These two communities will each receive sufficient funds from the Robert Wood Johnson Foundation to establish two centers beginning in the 1995-96 school year if an implementation grant proposal is approved by the Foundation. The goal of "Making the Grade" is to expand school-based health centers across the state in those communities that have expressed a need for them as part of a comprehensive school health program that will enable the children of Tennessee to live a healthy life now and prepare them for a healthy future. ❑

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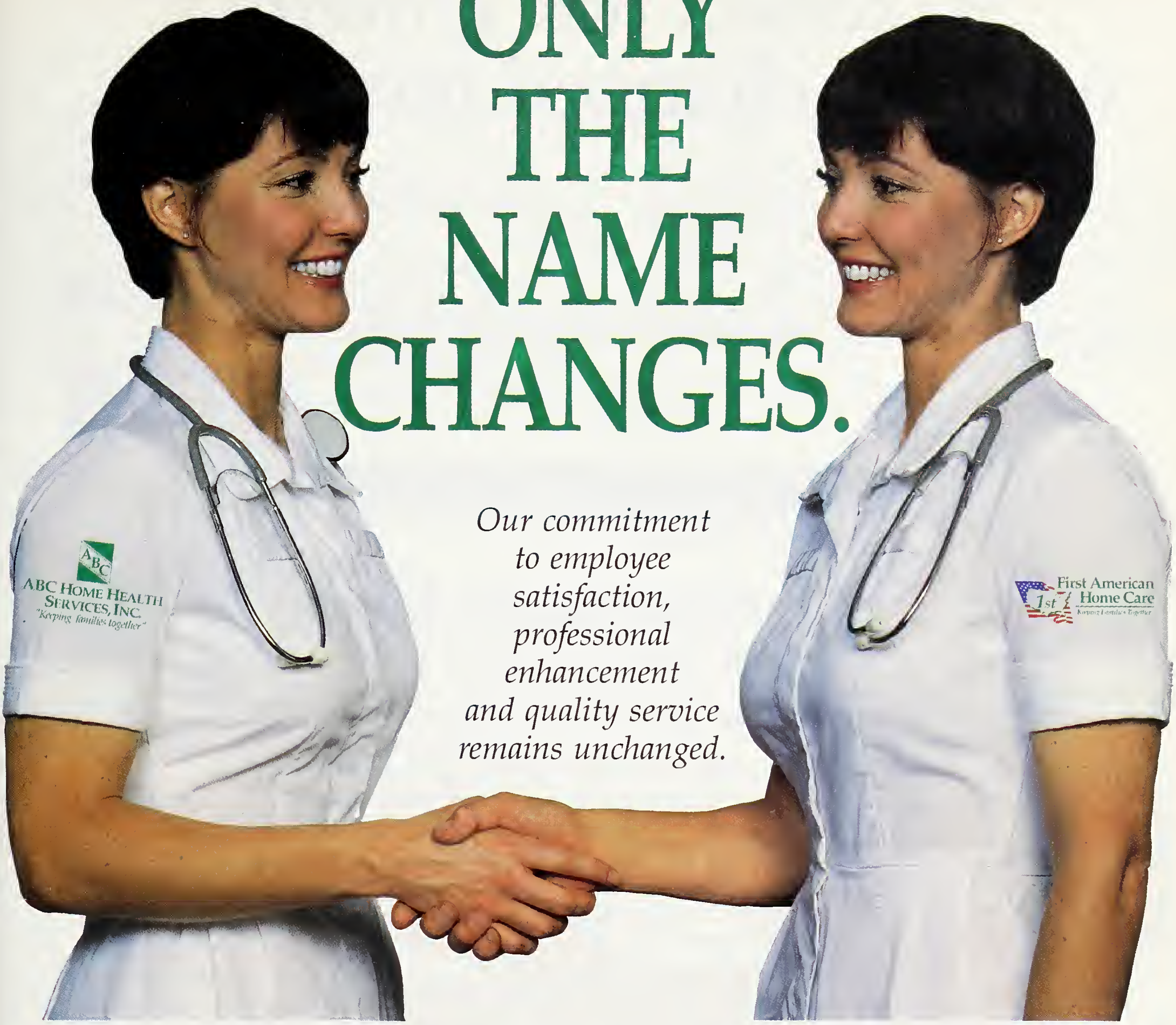
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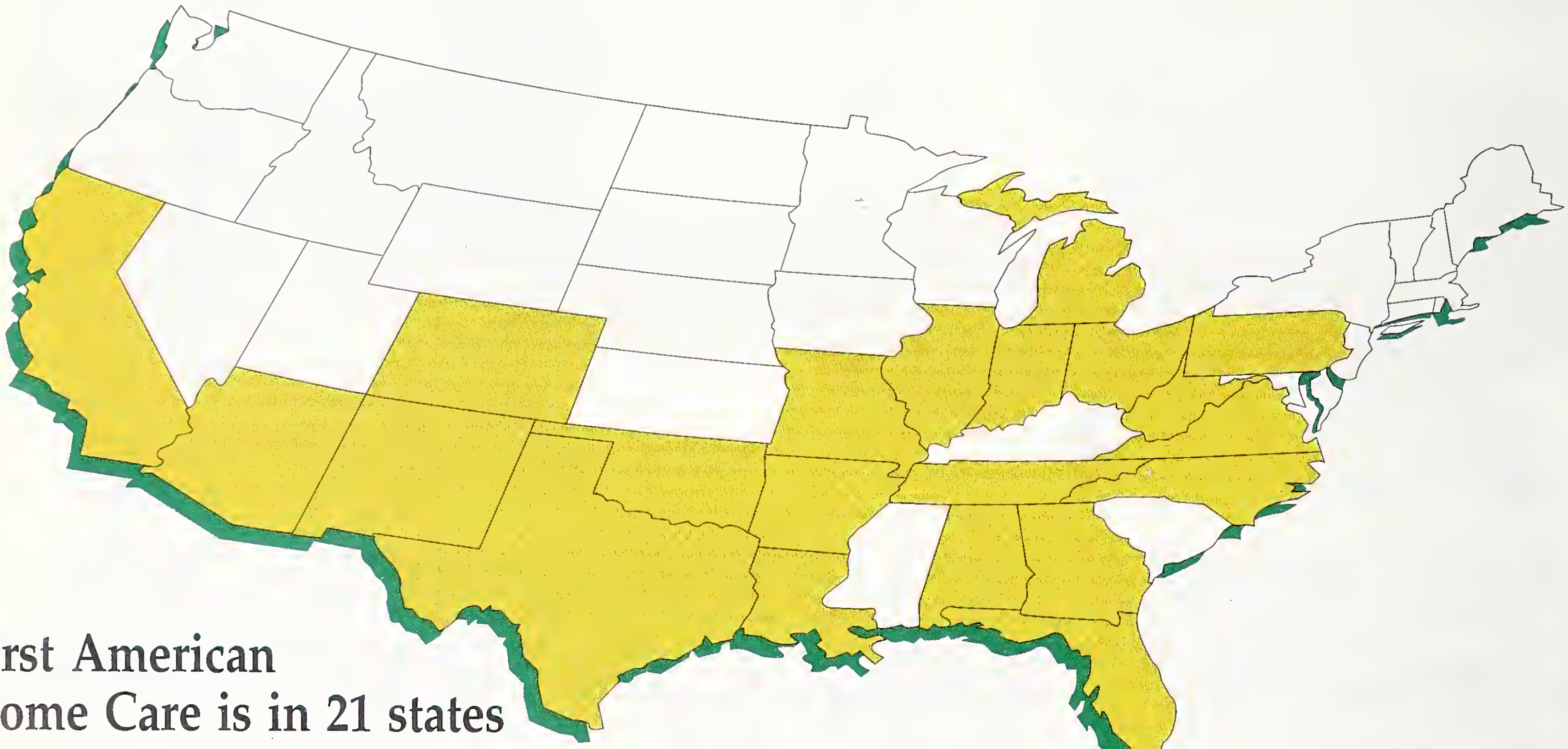

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president's page

Virgil H. Crowder Jr.

United Voice

I have just returned from the winter meeting of the American Medical Association. On the long ride home I considered the massive amount of proposals, reports, and resolutions presented to the House of Delegates. Each state or region may have special problems that it brings to the floor. The work of the House is done in a very democratic format, and in reference committees there is often heated debate.

Doctors as groups or individuals have strong opinions and are not lax in stating them. I was singularly impressed that once the House took action the debate ceased and this became the position the AMA would present.

This united support is particularly needed in Tennessee at the present time. We are beginning a series of meetings among the various physician providers to discuss changes we can recommend to the new administration to improve TennCare. TennCare is not going to fade away, and massive amounts of new money will not be plowed into the program. As an association we must try to represent both the public good and all physicians. We must try to find an approach that will be fair to the subspecialist and to primary care physicians. This approach must improve access to care for all citizens of Tennessee.

Let us strive not to so divide ourselves into special interest groups that the government machinery can destroy the freedom of physicians to deliver high-quality medical service to the public—our patients!

Virgil H Crowder Jr. M.D.

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FEBRUARY, 1995

editorials

AMA Citation Goes to Hadley Williams

It should not be a matter of wonder to any member of the Tennessee Medical Association (TMA) that at its Interim Meeting just concluded the American Medical Association (AMA) House of Delegates awarded its Citation of a Layman for Distinguished Service to L. Hadley Williams Jr., TMA's CEO. The award will be presented to Mr. Williams by the Association at its June 1995 Annual Meeting in Chicago.

Mr. Williams entered the employ of the TMA in 1963, becoming the Assistant Executive Director in 1965. On the retirement of Jack Ballentine in 1976, Mr. Williams became Executive Director, a position he held until the TMA Board created the position of Chief Executive Officer in 1992; at that time Don Alexander assumed the position of Executive Director.

When the crisis in professional liability coverage in 1975 led to the formation of the State Volunteer Mutual Insurance Company, Mr. Williams became a founding member of its Board of Directors, a position he continues to hold. He has served nationally as President of the American Association of Medical Society Executives (AAMSE), and as a member of the Board of Directors of the Professional Convention Management Association (PCMA). He has also held committee appointments in the Physician Insurers Association of America (PIAA). From 1981 to 1989 he served on the Advisory Committee to the Executive Vice-President of the AMA.

In recognition of his long and meritorious service to the TMA, which also in his earlier years included serving as Public Service Director from 1963-65 and lobbyist from 1963-76, the TMA House of Delegates at its 1988 Annual Meeting elected Mr. Williams to honorary membership in the Association (*J Tenn Med Assoc* 88:373, 1988), one of only two non-physicians to have been accorded this honor.

If I may be allowed a personal comment to this thus far rather sterile recitation, it is that I might express my own gratitude to Hadley for his friendship and his unfailing helpfulness to me as Editor of this publication. When in 1972 I took over the editorship from the late Rudie Kampmeier, M.D., a former revered teacher of mine and my good friend and hero, I knew it was my job to fill as best I could some unfillable shoes. Medicine was in one of its periodic upheavals (if you live long enough, unless you are dreadfully dense it begins to dawn on you that whatever goes around comes around, and there really is nothing new, at least of a nontechnical nature, under the sun). I thought I had some things to say, and I knew English. I had also been good at English composition. And there my qualifications for the editorship stopped. I got pointers from Dr. Kampmeier and from Ad Scoville, the long-time Associate Editor, to be sure, but any procedural knowledge I have I learned from Hadley. Fortunately, getting the *Journal* out was Hadley's job, since he was, as he still is, its Business Manager. During my early years as Editor he was also the Managing Editor. If I am a good editor today, it is to a great extent Hadley's handiwork. If I'm not, it's simply because he had a slow learner for a pupil.

Following is a quotation from the AMA Board of Trustees' nomination of Hadley for Citation of a Distinguished Layman. It pretty much says it all.

> Mr. Williams is widely recognized throughout the field of medical society executives for his innovative leadership . . . His singular dedication to the physicians of Tennessee has earned him deep respect and admiration . . . .
>
> Mr. Williams has been very effective in supporting the medical profession in all of its activities to uphold the standards, ethics, and freedoms which it seeks to preserve. He has been active on the local, state, and national levels, bringing a keen sense of duty and devotion to the several leadership positions he has held in the American Association of Medical Society Executives. He has also served with distinction on the Advisory Committee to AMA's Executive Vice-President and has served in a number of leadership capacities for the Professional Convention Management Association.
>
> Mr. Williams has been a key player in resolving some of medicine's most difficult crises. In the mid-1970s, he was a founding member of the physician-owned liability company, State Volunteer Mutual, which was created in response to the professional liability crisis. He has served as a member of the Board of Directors for nineteen years.
>
> Mr. Williams' legacy of commitment to the tenets of organized medicine and his loyal support for the physicians of Tennessee have endeared him to his colleagues and to physicians across the nation.

At the end of April 1995, Hadley Williams will retire as CEO of the Association. He will, however, continue his services to its members as Executive Vice-President of TMA Physician Services, Inc. Your Editor joins with all of the officers, members, and employees of the Association in wishing him godspeed in all his future endeavors.

J.B.T.

mail box

Been in Practice Over 62 Years?

To the Editor:

I am 88 years old and have been practicing in Lebanon, Tennessee, since October 1932.

I wonder how many more physicians in the state have lived to practice 62 years. If there are any such surviving I would like to meet them.

Sam B. McFarland, M.D.
404 E. Spring St.
Lebanon, TN 37087

Disability Income Insurance

To the Editor:

Since 1944, Tennessee Medical Association members have placed their trust in Commercial Life Insurance Company by allowing Commercial Life to insure their most valuable asset, their ability to earn income. In return, Commercial Life Insurance Company has delivered more than $10,000,000 in benefits to Tennessee physicians since 1980.

This long-lasting relationship between the TMA and Commercial Life continues today. While other disability insurance carriers are dramatically changing plan benefits and/or withdrawing from the disability marketplace altogether, Commercial Life continues to offer the best contractual provisions such as the valuable "Own Occupation Specialty" definition of disability. Tennessee physicians can depend upon Commercial Life and The TMA Association Insurance Agency, Inc. for quality products and services.

Recently, Commercial Life created new marketing materials consisting of a full-page display advertisement and a companion article on the risk of becoming disabled. The full-page ad ran in the *Journal* for the first time in the November issue and again in January. The article Commercial has written on disability insurance "Who Will Provide Your Income If You Can't Work?" is very informative and, I believe, will be beneficial to your readership (published elsewhere in this issue).

George "Con" Knox, Jr., CLU, Vice-President
The TMA Association Insurance Agency, Inc.
P. O. Box 1109
Chattanooga, TN 37401-1109

National Domestic Violence Project

To the Editor:

Several Tennessee surgeons have enrolled in a very timely and compelling program, the National Domestic Violence Project. This project allows each surgeon opportunities to use his skills, dedication, and compassion to help victims of domestic abuse.

In 1994, the American Academy of Facial Plastic and Reconstructive Surgery (AAFPRS) in partnership with the National Coalition Against Domestic Violence (NCADV) created the National Domestic Violence Project in an effort to help women break out of the cycle of violence, enhance their self-esteem, and aid them in rebuilding their lives.

The Project has a toll-free telephone number that provides the names of surgeons in the victim's area who are available for a free consultation and who will perform surgery if necessary. In the last two months, the Academy has received hundreds of phone calls from victims across America. To date, dozens have been operated on with many scheduled for procedures in the coming months.

The following Tennessee surgeons have signed on: Drs. Richard Chaffoo, Chattanooga; Phillip R. Langsdon, Germantown; Rande H. Lazar, Memphis; Nelson E. Link, Bristol; Frank Melvin, Kingsport; and William Russell Ries, Nashville.

For information, call (800) 842-4546.

new members

The *Journal* takes this opportunity to welcome these new members to the Tennesssee Medical Association.

NORTHWEST TENNESSEE ACADEMY OF MEDICINE
James Thomas Batey, M.D., Union City

PUTNAM COUNTY MEDICAL SOCIETY
R. Alex Case, M.D., Cookeville
Scott A. Copeland, M.D., Cookeville

SULLIVAN COUNTY MEDICAL SOCIETY
Frederick Steven Falchook, M.D., Bristol

in memoriam

Virgil H. Crowder Sr., age 90. Died December 23, 1994. Graduate of University of Tennessee College of Medicine. Member of Lawrence County Medical Society.

Bruce Rankin McCampbell, age 78. Died November 15, 1994. Graduate of University of Tennessee College of Medicine. Member of Knoxville Academy of Medicine.

personal news

The following TMA members have been named Fellows of the American College of Surgeons: *John Henry Eason, M.D.,* Maryville; and *Mark A. Fox, M.D.,* Crossville.

Actions of the Tennessee State Board of Medical Examiners

November 1994

Name: James Kenneth Champion, M.D. (Atlanta)
Violation: Unprofessional conduct; misuse of controlled substances.
Action: License placed on probation for four years; must complete one year of surgical education and research.

Name: Michael Patterson, M.D. (Memphis)
Violation: Noncompliance with board order.
Action: Per agreed order, license revoked.

TMA Members Receive AMA Physician's Recognition Award

The following TMA members qualified for the AMA Physician's Recognition Award during November 1994. This list, supplied by the AMA, does not include members who reside in other states.

Physicians can receive the PRA certificate valid for one, two, or three years. For the one-year award, physicians report 50 hours of continuing medical education, including 20 hours of Category 1; for the two-year award, physicians report 100 hours of CME, including 40 hours of Category 1; for the three-year award, physicians report 150 hours of CME, 60 of which are Category 1. Each application for the PRA must also verify participation in Category 2 CME activities.

Benjamin L. Beatus, M.D., Memphis
John C. Gaw, M.D., McMinnville
Danny Hays, M.D., Lewisburg
Kenneth L. Hill, M.D., White Pine
Michael A. McAdoo, M.D., Milan
Susan K. McGuire, M.D., Chattanooga
Robert C. Murray, M.D., Brentwood
Takis Patikas, M.D., Nashville
Robert W. Ridley, M.D., Tullahoma
Marvin J. Rosenblum, M.D., Nashville

announcements

CALENDAR OF MEETINGS

NATIONAL

Mar. 1-4	Association for Academic Psychiatry—La Mansion del Rio, San Antonio
Mar. 2-5	American Medical Directors Association—Disney's Contemporary Resort, Orlando
Mar. 2-5	American Psychosomatic Society—New Orleans
Mar. 4-8	American Society of Clinical Hypnosis—Doubletree at Horton Plaza, San Diego
Mar. 5-9	Society of Toxicology—Stouffer-Harborplace, Baltimore
Mar. 9-12	American Society for Adolescent Psychiatry—Hyatt, Sarasota
Mar. 15-17	American Society for Clinical Pharmacology and Therapeutics—Town and Country, San Diego
Mar. 16-18	American College of Legal Medicine—Walt Disney World Dolphin, Orlando
Mar. 16-19	American College of Physicians—Marquis Marriott, Atlanta
Mar. 17-19	American College of Nuclear Medicine—Saddlebrook Resort, Tampa

Mar. 19-23	American College of Cardiology—New Orleans
Mar. 23-25	Big Sky Pulmonary Ski Conference (sponsored by Amer Lung Assoc)—Big Sky Resort, Mont.
Mar. 26-29	American Institute of Ultrasound in Medicine—Marriott, San Francisco
Mar. 30-Apr. 2	American College of Preventive Medicine—Hyatt, New Orleans
Mar. 30-Apr. 2	American Society of Regional Anesthesia—Peabody, Orlando
Mar. 30-Apr. 2	International College of Surgeons—U.S. Section—Hyatt, San Diego
Apr. 2-4	American Society for Laser and Surgery—San Diego
Apr. 5-8	International Society for Heart and Lung Transplantation—San Francisco
Apr. 5-9	American Association for Pediatric Ophthalmology and Strabismus—Orlando
Apr. 6-8	American Surgical Association—Chicago
Apr. 7-9	American Society of Abdominal Surgeons—Las Vegas
Apr. 9-13	American Society for Investigative Pathology—Atlanta
Apr. 9-13	American Society for Pharmacology and Experimental Therapeutics—Atlanta
Apr. 19-22	American Burn Association—Albuquerque
Apr. 19-23	Mid-America Orthopaedic Association—Palm Beach, Fla.
Apr. 21-23	American Academy of Thermology—Lake Buena Vista, Fla.
Apr. 22-27	American Association of Neurological Surgeons—Orlando
Apr. 22-27	American Society of Clinical Pathologists—Orlando
Apr. 23-26	American Association for Thoracic Surgery—Boston
Apr. 23-26	Southwestern Surgical Congress—San Antonio
Apr. 23-28	American Urological Association—Las Vegas
Apr. 26-29	American Cleft Palate-Craniofacial Association—Tampa
Apr. 26-29	American College of Medical Quality—San Diego
Apr. 28-May 4	American Society for Head and Neck Surgery—Palm Desert, Cal.
Apr. 29-30	American Laryngological Association—Palm Desert, Cal.

STATE

Apr. 6-9	TMA 160th Annual Meeting—Stouffer Renaissance Nashville Hotel/Nashville Convention Center

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Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

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Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

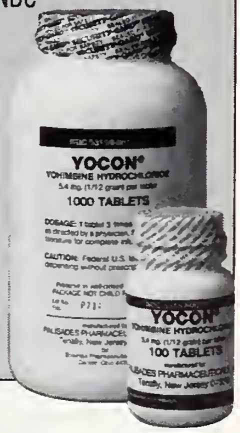
Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:
1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

Rev. 1/85



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Partners in Medicine—Together We Win!

Good communication, spirit, pride, enthusiasm, motivation, and direction needed strengthening in our Medical Society and our Alliance, so we started this year with a new attitude . . . cooperation! Dr. Larry Westerfield, president of the Sullivan County Medical Society (SCMS), was quick to recognize and appreciate the creative resources within the Kingsport Medical Alliance (KMA). We initiated two joint projects that have been extremely successful; our combined newsletter, "In the Bag" and the "Hour of Power–Vote" campaign.

"In the Bag" is a quarterly newsletter that combines news of SCMS and KMA. Guided by our editor, Mary Sewell, the Alliance gathers, compiles, and publishes the information and news. The SCMS underwrites all costs, including the mailings. In addition to medical and legislative news, committee reports, and meeting notices, Mary decided to include human interest stories. The first issue published in September was an outstanding success. We are anxiously awaiting the next issue, due in December!

Another joint project was the "Hour of Power–Vote" campaign. Again, we supplied the creative energy, and the cost was underwritten by the SCMS. Our legislative committee, organized by Caroline Mosrie, met with *every* medical office manager to distribute posters, stickers, and buttons to *all* of our physicians. We generated so much enthusiasm from this campaign that some medical offices closed for their "Hour of Power" to vote! One precinct increased the percent of physicians voting from 30% to 80%!

Under Dr. Westerfield's leadership, the president of the KMA and appropriate chairmen are invited to attend the SCMS Board meetings. It is through this direct communication that we recognize common goals and share our resources. Two more joint projects are planned for the future; a combined New Year's party . . ."Out of the Bag!" and a Teen Health Workshop in May. This *Partnership In Medicine* that is developing between our two societies is resulting in better communication, attitudes, and participation within both organizations . . . it is a Win Win Partnership! ❑

Bette Patton, President
Kingsport Medical Alliance

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TMA continuing medical education opportunities

TMA is accredited by the Accreditation Council for Continuing Medical Education (ACCME) as a sponsor of continuing medical education for physicians. Nonaccredited organizations may request TMA's joint sponsorship of CME activities. As an accredited sponsor, TMA is authorized to designate certain CME activities for credit in the AMA Physician's Recognition Award Program.

TMA is recognized by ACCME as the accreditor of institutions in Tennessee conducting intrastate CME programs. Any organization conducting such programs may apply to TMA for accreditation as a sponsor of CME.

Inquiries regarding TMA joint sponsorship of CME or application for accreditation as a sponsor of CME should be made in writing to: Director of Continuing Medical Education, Tennessee Medical Association, PO Box 120909, Nashville, TN 37212-0909.

IMPORTANT NOTICE

Published in this section are many educational opportunities which come to our attention which might be of interest to our membership. As some of these are very long, full year schedules, and others are detailed descriptions of courses, in order to conserve space, most of them will be published in only one issue of the Journal.

IN TENNESSEE

VANDERBILT UNIVERSITY MEDICAL CENTER

Clinical Training Program

The doctor and faculty plan an individualized program to meet the physician's practice needs. This may include contact with patients, participation in clinical rounds and diagnostic procedures, interaction with faculty and housestaff, access to the Medical Center Library and other learning resources, and other benefits of a preceptorship. AMA/PRA Category 1 credit is provided for each hour of participation. Physicians *must* be licensed and be in active practice with evidence of liability coverage.

Ongoing Rounds and Conferences

Arrangements can be made for licensed practicing physicians to attend for credit.

Special Conferences/Seminars

Detailed brochures for the following courses are available. In some cases, registration numbers are limited.

Mar. 24-25	Laryngeal Endostroboscopy
Apr. 18	Laser Assisted Uvulo-Palatoplasty: A New Treatment for Snoring
Apr. 20-22	Lasers in Otolaryngology-Head and Neck Surgery
May 18-19	Advanced/Functional Endoscopic Sinus Surgery Workshop 1995
May 18-21	12th Annual Family Medicine/Primary Care Update
May 19-20	Phono Surgery Tutorial and Hands-On Workshop
May 25-27	19th Annual Sonography Symposium
June 16-17	Laryngeal Endostroboscopy
July 2-6	12th International Congress of Nephrology—Madrid, Spain
July 18-21	18th Annual Contemporary Clinical Neurology Symposium—Hilton Head, S.C.
Aug. 3-4	Advanced/Functional Endoscopic Sinus Surgery 1995
Aug. 29	Laser Assisted Uvulo-Palatoplasty: A New Treatment for Snoring
Oct. 27-28	Laryngeal Endostroboscopy
Nov. 2-4	Lasers in Otolaryngology-Head and Neck Surgery

For information contact Division of CME, Vanderbilt University School of Medicine, D-8211 MCN, Nashville, TN 37232, Tel. (615) 322-4030.

MEHARRY MEDICAL COLLEGE

Extended Continuing Education Program

Arrangements have been made with many services and departments in the medical school to allow practicing physicians to participate in the service's activities for a period of one day to one week. This program provides an opportunity for physicians to study in depth for a specified period. The schedule of activities is individualized in response to the physician's request by the participating department. The experience includes conferences, ward rounds, audiovisual materials and contact with patients, residents and faculty.

Fee: $75 per day or $275 per five-day week of educational experience including lunch and parking at Meharry Medical College. *Credit:* AMA Category 1 of the Physician's Recognition Award, AAFP, and Continuing Education Units from Meharry Medical College. *Application:* For information contact Henry A. Moses, Ph.D., Director of Continuing Education, Meharry Medical College, 1005 D.B. Todd Blvd., Nashville, TN 37208, Tel. (615) 327-6235.

UNIVERSITY OF TENNESSEE

Continuing Education Schedule

Memphis

Mar. 3-4	Pediatric Symposium and Etteldorf Lecture
Mar. 6-10	Current Issues in Obstetrics and Gynecology—Snowmass, Colo.
Mar. 12-17	28th Annual Review Course for the Family Physician
Mar. 23-24	13th Annual Review Conference on Neonatal and Perinatal Care
Mar. 30-Apr. 1	Critical Care and Emergency Medicine—Hot Springs, Ark.
Mar. 30-Apr. 2	Oral Pharyngeal, Laryngeal Cancer
March or April	Memphis Eye Convention
Apr. 8	Pediatric Orthopaedics
June 1-2	General Surgery Update
Aug. 7-12	Contemporary Issues in Obstetrics and Gynecology—Destin, Fla.
Aug. 23-26	Pulmonary and Critical Care Medicine—Destin, Fla.
Sept. 14-15	27th Conference on the Mother, Fetus, and Newborn

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Extracorporeal Membrane Oxygenation: A Review of Vanderbilt's First 50 Patients

SANDRA S. TOMITA, M.D.; SUSAN C. DONLEVY, R.N.; M. JOGIE MILES, R.N.;
WILLIAM F. WALSH, M.D.; and JOHN B. PIETSCH, M.D.

Introduction

Extracorporeal membrane oxygenation (ECMO) is a form of cardiopulmonary bypass used to support patients with reversible pulmonary and/or cardiac failure. It differs from heart-lung bypass used in the operating room in several respects. Arterial and venous cannulae are placed peripherally (neck, groin) rather than intrathoracic. The average amount of time on bypass is days to weeks rather than hours.

The first attempts at this form of extracorporeal circulation were performed in the 1960s, with the first successful prolonged extracorporeal bypass reported by Hill et al[1] in 1972 in an adult with multiple trauma and respiratory failure. In 1975, a multicenter NIH-sponsored trial of ECMO in adults with acute respiratory distress syndrome (ARDS) was begun but was terminated early when the survival of the ECMO-treated patients was not prolonged and overall outcome not significantly improved.[2] Despite these initial disappointing results, the use of ECMO in patients with reversible pulmonary disease proved to be beneficial in neonates. In 1976, Bartlett and his colleagues[3] reported the first successful use of ECMO in a neonate with meconium aspiration syndrome. By the mid-1980s, 18 centers had established ECMO programs and this technique had become an accepted form of therapy in the treatment of respiratory failure unresponsive to conventional therapy in moribund infants.[4] Today, over 9,000 patients (primarily infants and children) have been treated with ECMO in over 100 centers around the world.[5] The use of extracorporeal support in adults which had essentially stopped in North America in 1979 has been increasing primarily in Europe using a technique of extracorporeal Co_2 removal.[6]

The Vanderbilt Children's Hospital ECMO Program was established in October 1989. Here we report the results of our first 50 patients.

Materials and Methods

We performed a retrospective review of patients treated with ECMO at the Vanderbilt Children's Hospital from December 1989 to December 1993. The data obtained included gestational age, gender, birth weight, age placed on ECMO, ECMO duration, diagnosis, and outcome.

Patient Population. ECMO is indicated in patients with acute reversible respiratory failure not

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From the Department of Pediatric Surgery and the Division of Neonatology, Vanderbilt University School of Medicine, Nashville.

Reprint requests to 1211 21st Ave. South, Suite 338, Nashville, TN 37212 (Dr. Pietsch).

responding to conventional medical therapy. Those patients who are considered to have a projected mortality of >80% are ECMO candidates. In neonates, a variety of parameters have been used to predict mortality, including oxygenation index (OI) and arterial alveolar oxygen difference ($AaDO_2$).[7,8] We and others use a Po_2 <50 for four hours despite maximum support.[9] Common neonatal diagnoses treated with ECMO are meconium aspiration syndrome (MAS), sepsis/pneumonia, primary pulmonary hypertension (PPHN), and congenital diaphragmatic hernia (CDH).

Prior to ECMO, all neonatal patients receive a cranial ultrasound to exclude central nervous system anomalies and intracranial hemorrhage; an echocardiogram is also obtained to identify congenital cardiac disease. Infants are excluded from ECMO if any of the following conditions are present: severe congenital anomalies (ECMO is a method of supporting patients with acute pulmonary or cardiac failure in order to "buy time" for improvement), less than 34 weeks gestation (the risk of intracranial hemorrhage with heparinization is high), or severe asphyxia or intracranial hemorrhage.

In pediatric ECMO, the entry and exclusionary criteria are less well defined. Candidates are children who are failing maximum conventional support with a reversible pulmonary or cardiac condition that, if successfully treated, would return them to normal. Common pediatric ECMO conditions include pneumonia, ARDS, and barotrauma. ECMO is not indicated in children suffering from severe brain damage or multisystem organ failure, or who have been mechanically ventilated for more than ten days.

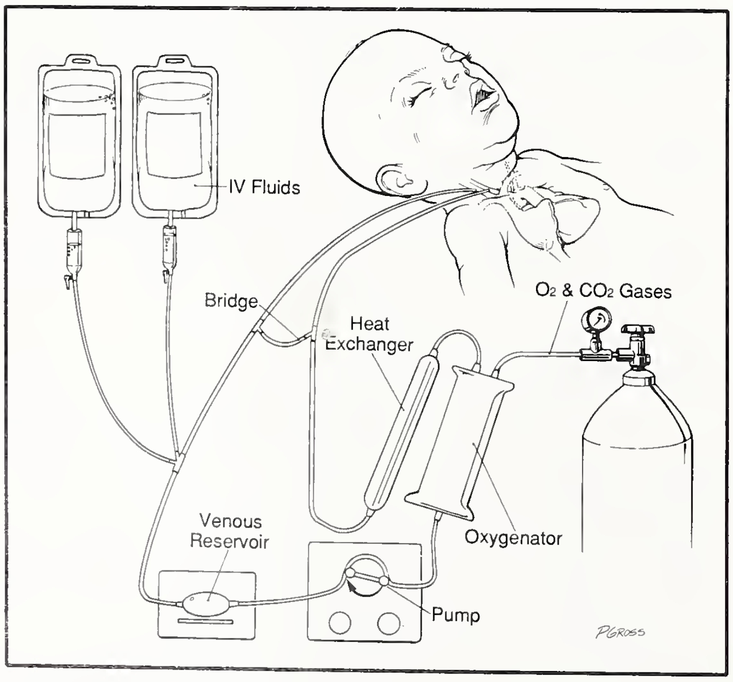

Figure 1. ECMO circuit.

ECMO Technique. The ECMO circuit consists of a servo-regulated roller pump, membrane lung, heat exchanger, tubing, and connectors (Fig. 1). Patients are cannulated using either venoarterial or venovenous perfusion.[10] Cannulation is performed at the bedside with an operating room team present. Right atrial blood is passively drained via a right internal jugular vein cannula to a distensible bladder. Blood is drawn from the bladder by the roller pump and is perfused through a membrane oxygenator that adds O_2 to the blood and removes Co_2 and water vapor. The blood is warmed to body temperature by passing it through a heat exchanger and then returning it to the patient. In venoarterial bypass, the return blood is returned through a carotid artery cannula into the aortic arch. In venovenous bypass, blood is returned to the venous circulation. Venovenous ECMO is our preferred treatment if the patient is of suitable size and cardiac function is adequate. Routine blood flow rates are 100 to 150 cc/kg/min to achieve adequate oxygenation.

Once on ECMO support, paralyzing agents, vasoactive drugs, and other infusions are generally discontinued. Patients are continuously sedated to prevent accidental cannula removal. Ventilator settings are adjusted to minimal settings to minimize barotrauma and allow "lung rest." Heparin is infused continuously at 30 to 60 units/kg/hr. The level of anticoagulation is monitored hourly by the whole blood activated clotting time (ACT), with the heparin dose adjusted to maintain the ACT between 180 and 200 seconds. Platelet consumption occurs during ECMO, requiring platelet transfusions to maintain a platelet count greater than 100,000/μl. Antibiotics and parenteral nutrition are routinely administered. Diuretics or hemofiltration is occasionally required to remove excess fluid.

ECMO is continued until pulmonary/cardiac function recovers or the situation is deemed irreversible. We repair the carotid artery in venoarterial ECMO neonates at the time of decannulation if technically feasible. Follow-up of patients after discharge includes physical, developmental, and neurologic evaluations at 6, 12, and 18 months, and at 3, 5, and 7 years.

Results

Forty (80%) of the ECMO cases done at Vanderbilt were neonatal cases; the other ten (20%) were patients treated in the pediatric intensive care unit (PICU). All of the neonates treated with ECMO

TABLE 1

DIAGNOSES AND OUTCOMES OF NEONATES PLACED ON ECMO

Diagnosis	Total	Survived	Deaths	% Survived
Sepsis	18	12	6	67%
MAS	11	10	1	91%
CDH	9	6	3	67%
PPHN	1	1	0	100%
Hyperammonemia	1	1	0	100%

TABLE 2

DIAGNOSES AND OUTCOMES OF PEDIATRIC PATIENTS PLACED ON ECMO

Diagnosis	Age	Outcome
RSV pneumonia	2 mo.	Survived
Postpump cardiac failure	3 wk.	Survived
Cardiomyopathy	6 wk.	Died
Aspiration pneumonia	15 mo.	Survived
RSV pneumonia	3 mo.	Survived
Aspiration pneumonia	2.5 mo.	Survived
Aspiration pneumonia	2 yr.	Died
Pulmonary edema	7 mo.	Survived
ARDS	2.5 yr.	Survived
Asthma/air leak	4 yr.	Survived

were transported from outside our institution. Approximately half of the pediatric cases were referred for ECMO to the PICU at Vanderbilt Children's Hospital.

No significant differences were found in comparing demographic information of survivors and nonsurvivors. There were slightly more boys than girls. The gestational age was slightly higher for the survivors than for the nonsurvivors (38.9 ± 2.2 vs. 37.6 ± 1.3). Mean birth weight was 3,295 ± 686, survivors having a higher birth weight than nonsurvivors (3,351 ± 215 vs. 3,093 ± 571). The mean age at time of ECMO for all neonates was 18.9 ± 31.3 hours. Table 1 lists the neonatal experience. Sepsis/pneumonia was the most common neonatal diagnosis, comprising 48% of our NICU cases, followed by MAS, CDH, and PPHN. The survival rate was best for meconium aspiration pneumonia with a 91% survival, and worst for sepsis/pneumonia with a 67% survival.

Table 2 shows the conditions for which ECMO was performed in the pediatric cases; these included cardiac as well as respiratory failure. Ages of these patients ranged from 3 weeks to 4 years. The overall survival in the pediatric patients was 8/10 (80%). The duration of ECMO was longer in the pediatric ECMO patients (222.0 ± 138.2 days) vs. neonates (108.7 ± 70.2 days). One infant was a former premature with bronchopulmonary dysplasia and acute barotrauma treated with ECMO for 18.8 days.

Discussion

From its inception in 1976, neonatal ECMO has grown rapidly from an experimental technology to standard medical care. The Extracorporeal Life Support Organization (ELSO) was organized in 1989 to develop guidelines for this rapidly developing technology and to monitor its quantity and quality through a case registry. Essentially all ECMO centers in the United States and many around the world contribute to the database.

Forty-eight percent of our neonatal ECMO cases were for sepsis/pneumonia. This is in contrast to other centers in the ELSO registry in which MAS has been the most common cause of neonatal respiratory failure requiring ECMO (Fig. 2). Our relatively low number of neonates with MAS and PPHN requiring ECMO may reflect the quality of perinatal care in our referral area. The overall survival of our neonatal cases is 75%, lower than that of the ELSO registry's survival of 81%, reflecting the preponderance of sepsis/pneumonia cases requiring ECMO at our center. Septic neonates deteriorate rapidly and our ECMO results in this group may correlate with the length of time between diagnosis and institution of ECMO. This has been reported by other ECMO centers.[11] Our survival rates are comparable to the ELSO registry if analyzed separately for each diagnosis (Table 3). Also, although our pediatric experience is only ten cases, our survival rate (80%) has been good thus far, compared to the ELSO registry data (55% in 1993). Selecting patients with reversible problems is the primary determinant of survival in pediatric ECMO.

Complications of ECMO include mechanical complications such as oxygenator failure, clots in the circuit, air in the circuit, cannula problems, and

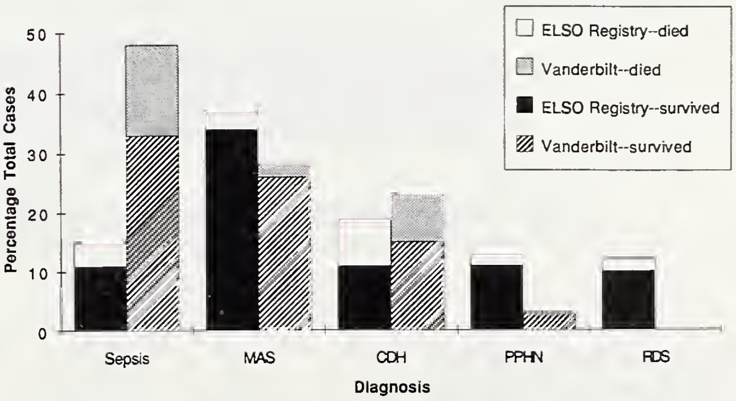

Figure 2. Comparison of Neonatal ECMO Cases—Vanderbilt vs. ELSO Registry

kinking of the tubing. Serious mechanical complications occur infrequently, as do medical complications except bleeding. Medical complications include metabolic abnormalities, bleeding, renal insufficiency, and neurologic problems. The necessity of systemic anticoagulation increases the risk of hemorrhage in infants already subjected to hypoxia/asphyxia and hypotension from cardiorespiratory compromise. Intracranial hemorrhage is the most common life-threatening complication in neonates treated with ECMO, and the risk is increased in septic babies.[5]

In a compilation of several neurodevelopmental follow-up studies, neurologic morbidity has ranged from 11% to 30%.[12] According to our follow-up protocols for patients treated with ECMO at our institution, we have completed Bayley Scales of Infant Development on 17 of 21 children at 18 months of age following neonatal ECMO (Table 4). Bayley Scales provide a psychomotor developmental scale as well as a mental developmental scale. If assessment is performed at an appropriate age, these scores can be correlated with later IQ data. The children who are evidencing delay required CPR prior to ECMO and had older age at onset of ECMO treatment. Because of the extreme severity of illness in the infants treated with ECMO, test results in the suspect group cannot be attributed directly to the ECMO procedure. The surviving children who had abnormal head ultrasound findings could not be distinguished from the other ECMO survivors at 18 months of age (*P* >.25). On mental scales, 76% of the children treated with ECMO scored at average or above, and 69% scored at average or above on psychomotor testing. Although the long-term developmental outcome in ECMO-treated children cannot be determined until school age or later, it appears that the majority of these children surviving ECMO show promising intellectual outcome.

TABLE 3

SURVIVAL ECMO PATIENTS

	Vanderbilt	ELSO Registry
Total	76%	75%
Neonatal	75%	81%
Sepsis/pneumonia	68%	76%
MAS	91%	93%
CDH	67%	58%
PPHN	100%	83%
RDS	No cases	84%
Other	100%	77%
Pediatric	80%	50%

A variety of new pharmacologic agents and technologies have been added to the treatment options for these critically ill patients. One of the newest techniques being investigated is inhalational nitric oxide therapy (NO), which is now undergoing a multicenter trial with Vanderbilt as a participant. Inhaled nitric oxide has been shown to selectively lower pulmonary vascular resistance with minimal systemic effects.[13] If proven safe and efficacious, NO may decrease the need for ECMO in infants with reversible pulmonary hypertension as a major component of their illness. Conversely, the infants who do require ECMO will, by definition, be sicker and less likely to have a reversible illness. Our initial experience would predict that ECMO survival rates may actually decrease if only those infants who fail NO are treated with ECMO. The total number of ECMO-treated infants may decrease, but the number of deaths will remain relatively constant unless new technology such as heparinless ECMO becomes available.

Central to the success of ECMO is early referral of the hypoxic patient to an ECMO center. Boedy et al[14] described a "hidden mortality" associated with ECMO, referring to patients transferred from outside an ECMO center who died before ECMO could be instituted. Septic babies are particularly prone to rapid deterioration of both oxygenation and hemodynamic stability. The availability of

TABLE 4

BAYLEY SCALES OF INFANT DEVELOPMENT SCORES FOR 18-MONTH-OLD NEONATAL ECMO SURVIVORS

	Significantly Delayed		Suspect	Average	Above Average	Total
	≤50	≤68	69-83	84-116	117+	
Mental Developmental Index	1	0	3	11	2	17
Psychomotor Developmental Index	3	0	2	9	2	16*

*One child refused to cooperate for motor testing.

ECMO in house allows a variety of treatment modalities to be employed in these critically ill patients without concern for the time required for transport to an ECMO center should these be unsuccessful. Equally important is an ECMO team and an established ECMO center. Our ECMO team consists of a medical director, surgical director, ECMO coordinator, ECMO pump specialists (RN), ECMO-trained bedside nurses, as well as the staff and housestaff members from pediatric surgery, neonatology, PICU, and radiology. Optimum results in extracorporeal life support (ECLS) require a coordinated team approach and members trained in the specialized care of the ECMO patient. Although ECMO is an example of a high-tech, invasive, and labor and resource intensive procedure, it clearly results in the survival of infants and children, the majority of whom would otherwise not have survived. As both ECMO and NICU technology and experience progress, we expect to see a more select patient population and shift towards greater utilization of ECMO in pediatric and adult patients. ❑

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Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
NOTES					1	2
3	4	5	6 TMA 160TH ANNUAL MEETING Nashville	7	8	9
10	11	12	13	14	15	16
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24	25	26	27	28	29	30

Does Type of Insurance Coverage Affect Medical Services Utilization Rate?

YOUSUKE TAKEMURA, MD

Introduction

The containment of health care costs is both a medical and a political goal. Exploration and documentation of correlates between type of insurance coverage and health care utilization rates are important if the impact of health care reform strategies is to be accurately assessed.

Many physicians suspect that indiscriminate utilization of medical services is correlated with type of insurance coverage. Patients whose health care costs are reimbursed via public funds are thought to utilize medical resources with greater frequency than those who incur some out-of-pocket costs each time a physician is consulted. There are few epidemiologic studies that have addressed this issue adequately, especially in an ambulatory care setting.[1-4] The Rand Corporation[1] reported that when cost sharing was higher, usage of medical services, and accordingly total health care expenditures, were lower. But their study was more theoretical than practical. The study by Howell[2] focused on only Medicaid participants and studies by Wolinsky[3] and Gravdal et al[4] focused more on medical services utilization in health maintenance organizations (HMO). Thus a definitive means to assess widespread differences in rates of medical services utilization according to insurance status is lacking. The aim of the present retrospective analysis is to determine whether a relationship exists between various types of insurance coverage and frequency of medical services utilization.

Method

The medical records of approximately 3,000 patients who sought health care from a university-affiliated family medicine residency center were randomly selected for review. Every third medical record was selected for potential study inclusion. The inclusion criteria were as follows:

- Active member of the family practice program's panel of patients during 1991,
- No change in insurance coverage for the duration of the study period, and
- Not pregnant.

Patients who had visited the clinic at least once before 1990 and at least once after 1992, ensuring that they were "active" members of the family practice residency program's panel of patients in 1991, were eligible for inclusion in the study. To simplify the study, patients whose insurance status or type of insurance changed in the time before 1990 and after 1992 were excluded, as were patients who presented themselves for prenatal or postpartum care in 1991, because the vast majority of pregnant patients seen in the family practice center are covered by Medicaid. A comparison of medical services use by insurance status for this patient population was not feasible. Four hundred ninety-two medical records met the criteria for inclusion in this study.

Age, sex, marital status, type of insurance coverage, and frequency of clinic/office visits were obtained from the patient's medical record that is kept in the family practice clinic. Frequency of emergency room use and hospital admission was obtained from the computerized patient history database of the acute care facility utilized by physicians providing ambulatory medical care at the family practice center.

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All dichotomous independent variables were analyzed with the *t* test. The insurance variable was analyzed using the analysis of variance (ANOVA) because the variable consisted of six values. Age 65 was used as the cutoff to create the dichotomous variable for age. Pearson and Spearman correlation coefficients were calculated to assess the correlation between all three types of hospital services.

Differences among the mean frequencies of visits to the office/clinic and visits to the emergency room by insurance category were assessed by the analysis of covariance (ANCOVA) to control for age, sex, and marital status variables. The choice of independent variables for inclusion in the ANCOVA analysis were determined by the *t* test and ANOVA in the above. All analyses were performed by the SAS computer program (SAS Institute, Cary, N.C.).

TABLE 1

CHARACTERISTICS OF THE SUBJECTS (N = 492)

Characteristics	No. (%)
Age*	
>65 years old	58 (11.8)
<65 years old	434 (88.2)
Sex	
Male	174 (35.4)
Female	318 (64.6)
Marital Status	
Married	242 (49.2)
Unmarried	250 (50.8)
Insurance	
Private insurance	291 (59.1)
Medicaid alone	101 (20.5)
Medicare alone	28 (5.7)
Medicare plus private insurance	24 (4.9)
Medicare plus Medicaid	19 (3.9)
Uninsured	29 (5.9)

*41.0 years old + 17.3 (Mean + Standard Deviation)

Results

Selected demographic characteristics of the 492 subjects comprising this study are summarized in Table 1. The subjects included in this study were predominantly middle-aged (41 ± 17.3 years), female (64.6%), and insured (private insurance [PI] 59.1%, Medicaid [MA] 20.5%, Medicare [MC] 5.7%, Medicare plus a private insurance supplement [MC/S] 4.9%, Medicare plus Medicaid [MC/MA] 3.9%, and uninsured [UI] 5.9%). An equivalent number were married versus unmarried (49.2% vs 50.8%, respectively). Table 2 identifies the descriptive characteristics of the subjects in each of the six insurance categories. All patients with private insurance were less than 65 years old, and the patients in this group were predominantly female (61.2%) and married (62.2%). All patients with MA alone were less than 65 years of age and were predominantly female (72.3%) and unmarried (82.2%). Patients with MC with or without supplemental health insurance were predominantly 65 years of age or older, as would be expected. Approximately 90% of MC/MA patients were unmarried. All uninsured patients were less than 65 years old and were predominantly female. Visits to the clinic/office ranged from 0 to 21 per year and to the emergency room 0 to 8 per year. Hospital admissions ranged from 0 to 6 per year. Mean frequencies for each type of medical service utilized compared to insurance status are shown in Table 2.

T test showed that those patients aged 65 years

TABLE 2

CHARACTERISTICS OF THE SUBJECTS IN EACH TYPE OF INSURANCE

	Type of Insurance*					
Characteristics	PI (N=291)	MA (N=101)	MC (N=28)	MC/S (N=24)	MC/A (N=19)	UI (N=29)
Age†						
>65 years old	0 (0)	101 (100)	21 (75.0)	22 (91.7)	13 (68.4)	0 (0)
<65 years old	291 (100)	0 (0)	7 (25.0)	2 (8.3)	6 (31.6)	29 (100)
Sex†						
Male	113 (38.8)	28 (27.7)	12 (42.9)	10 (41.7)	5 (26.3)	6 (20.7)
Female	178 (61.2)	73 (72.3)	16 (57.1)	14 (58.3)	14 (73.7)	23 (79.3)
Marital Status †						
Married	181 (62.2)	18 (17.8)	13 (46.4)	13 (54.2)	2 (10.5)	15 (51.7)
Unmarried	110 (37.8)	83 (82.2)	15 (53.6)	11 (45.8)	17 (89.5)	14 (48.3)
Office visits‡	2.21+3.2	4.43+3.8	4.21+3.47	5.08+3.86	5.84+5.33	1.34+1.67
ER visits‡	0.27+0.64	0.63+1.20	0.18+0.48	0.54+1.06	1.16+1.89	0.14+0.35
Admissions‡	0.11+0.50	0.23+0.65	0.04+0.19	0.29+0.62	0.21+0.42	0.14+0.58

* PI = Private insurance, MA = Medicaid, MC = Medicare, MC/S = Medicare plus private insurance, MC/MA = Medicare plus Medicaid, UI = uninsured.

† Number (%).

‡ Values are visits or admissions per year (Means + Standard Deviations).

TABLE 3

P VALUES OF THE TESTS OF EQUALITY OF MEAN FREQUENCY OF VISITS TO THE OFFICE/CLINIC IN ALL PAIRS OF INSURANCE GROUPS

i/j[*]	PI[†]	MA[†]	MC[†]	MC/S[†]	MC/MA[†]	UI[†]
PI	.	0.0001	<0.001	0.0001	0.001	NS
MA	0.0001	.	NS[‡]	<0.05	<0.01	0.0001
MC	<0.001	NS	.	NS	NS	0.0001
MC/S	0.0001	<0.05	NS	.	NS	0.0001
MC/MA	0.0001	<0.01	NS	NS	.	0.0001
UI	NS	0.0001	0.0001	0.0001	0.0001	.

[*] Ho: Mean frequency of office visits in (i) group = mean frequency of office visits in (j) group.

[†] PI = Private insurance, MA = Medicaid, MC = Medicare, MC/S = Medicare plus private insurance, MC/MA = Medicare plus Medicaid, UI = uninsured.

[‡] NS: Not significant.

or older visited the office/clinic more often than patients less than 65 years of age ($t=-3.15$, $P<.001$). Women visited the office/clinic more than men ($t=2.66$, $P<0.01$). ANOVA showed a significant difference in the mean frequency of office/clinic visits between each insurance category (F=13.9, $P=0.0001$).

Once again, female patients visited the emergency room more frequently than male patients, as shown by the t test ($t=2.35$, $P<0.05$). ANOVA showed a significant difference in the mean frequency of emergency room use among insurance categories (F=7.20, $P=0.0001$).

The t test indicates that married patients were admitted to the hospital more often than unmarried patients ($t=-2.14$, $P<0.05$). There was no significant difference in hospital admission rates among insurance groups.

Patients who utilized medical services frequently tended to exhibit similar patterns of use whether the setting was the office/clinic, emergency room, or hospital (Pearson and Spearman correlation analyses–each pair had $P=0.0001$).

Because insurance status or type of insurance coverage affected the frequency of visits to the office/clinic and to the emergency room as noted above, ANCOVA was used to analyze the differences in the mean frequencies of these medical uses to control for the confounding variables: age, sex, and marital status. It shows significant difference in the mean frequency of visits to the office/clinic among insurance groups, after controlling for age, sex, and marital status (F=9.89, $P=0.0001$). Table 3 shows P values for the tests of equality of mean frequency of visits to the office/clinic in all pairs of the insurance groups. MA, MC, MC/S, and MC/MA groups visited the office/clinic significantly more often than PI and UI groups.

There was also a significant difference in the mean frequency of visits to the emergency room among insurance groups (F=6.13, $P=0.0001$). Table 4 shows P values for the tests of equality of the mean frequency of visits to the emergency room in all pairs of insurance groups. The MA, MC/S, and MC/MA groups visited the emergency room significantly more often than the PI and UI groups.

Discussion

This study clearly shows significant differences in the rates of utilization of medical services by type of insurance coverage. There are a number of potential explanations for this finding.

Patients with MA may have poorer health than their privately insured counterparts and thus may require more frequent medical contact. Delays in seeking care due to real or perceived access problems may also provide an explanation for overutilization of medical services in the office setting by patients with MA. Howell[2] states that in the population less than 65 years of age, individuals covered by MA have the highest number of days with restricted activity (days on which a person does not perform usual activities because of health). Psychiatric factors may also contribute to the increased frequency of medical services use in this population. Barksy[5] indicates that frequent inappropriate users of health care services ("misusers") may experience symptoms more intensely than others and that this lowered sensitivity threshold leads to increased use of medical services. Wolinsky and Wolinsky[6] also suggest that misusers may need legitimization of symptoms through a highly regarded physician authority, and that legitimization may provide them with a release from work, increased attention and affection, and even financial reward from insurance payments. Wagner et al[7] suggest that misusers believe *more* strongly in their own responsibility for health, are *more* concerned about their mental health, and see psychological symptoms as *more* serious than appropriate users do. Shapiro et al[8] demonstrated that high users tend consistently and persistently to use health care services heavily.

The reasons cited above may also help to explain the heavier use of emergency room services by recipients of MA. MA recipients are more likely to utilize acute care facility outpatient departments and emergency rooms instead of physician offices as regular sources of medical services.[2] Access to medical care delivered in physician offices, however, is frequently limited by type of insurance coverage, thus inappropriate utilization of acute care services may not be as much by choice as by perceived necessity. That acute care environments are generally perceived as safe or secure environments may also play a role in their overutilization.

Users of MC are 65 years of age or older, or have serious or chronic diseases or conditions that qualify them for this type of insurance coverage. An older population with a higher incidence of serious disease can be expected to utilize medical services more often. McCall and Wai[9] have shown a greater frequency of use of medical services by a portion of the MC population and that these frequent users tend to remain so over time. McCall et al[10] has also demonstrated that MC supplemental health insurance policy ownership had a substantial, positive impact on medical services use and cost, particularly for elderly beneficiaries in fair or poor health.

The findings of this study support the contention that women utilize medical services significantly more often than men. Raymond[11] showed similar results, and cited an increased frequency of reporting symptoms as a consistent difference between female and male health care users. Overall, women reported symptoms about one and a half times as frequently as men.

My study showed that patients 65 years of age or older visited the office/clinic more frequently than younger patients. It is easy to theorize that older patients have a greater number and severity of physical or mental problems that need medical care by physicians than do younger patients. My review of the literature revealed no study demonstrating a significant difference in office/clinic visits between older and younger patients.

That this study showed no significant difference of admission frequency between each type of insurance coverage indicates that physicians' perception of need for admission was not governed by type of insurance coverage. Fairly stringent criteria govern access to inpatient services. These criteria are determined partially by health care providers and partially by third party payers. In contrast, access to clinic/office or emergency room services is determined primarily by the patient.

TABLE 4

***P* VALUES OF THE TESTS OF EQUALITY OF MEAN FREQUENCY OF VISITS TO THE EMERGENCY ROOM IN ALL PAIRS OF THE INSURANCE GROUPS**

i/j[*]	PI[†]	MA[†]	MC[†]	MC/S[†]	MC/MA[†]	UI[†]
PI	.	0.0001	NS[‡]	<0.01	0.0001	NS
MA	0.0001	.	NS	NS	<0.001	<0.001
MC	NS	NS	.	NS	<0.001	<0.05
MC/S	<0.01	NS	NS	.	NS	<0.001
MC/MA	0.0001	<0.001	<0.001	NS	.	0.0001
UI	NS	<0.001	<0.05	<0.001	0.0001	.

[*] Ho: Mean frequency of office visits in (i) group = mean frequency of office visits in (j) group.

[†] PI = Private insurance, MA = Medicaid, MC = Medicare, MC/S = Medicare plus private insurance, MC/MA = Medicare plus Medicaid, UI = uninsured.

[‡] NS: Not significant.

It is of interest that among all of the variables examined in the present study, only marital status significantly affected hospital admission rate. Raymond[11] also found that married persons and those with health care insurance coverage were more likely to seek medical care. A partial explanation for this finding may be that a spouse will more readily detect a serious decline in health status and encourage the patient to seek medical attention.

Previous studies[12-14] have examined the relationship between type of insurance coverage and hospital admission rates. Utilization rates for clinic/office and emergency services are less clearly defined. Only a few references on this topic are found in the literature.[1-4]

The present study is unique for several reasons. It looks not only at the utilization of acute care services, but at utilization rates of ambulatory and emergency medical services as well. It examines the potential relationship between various types of insurance coverage and frequency of medical services use. It has several limitations as well. Rates of medical services use may be seriously underestimated in this study, since only a single clinic/office setting and acute care facility's utilization rates were examined. Under our current system of health care delivery, patients are able to seek care from multiple providers at multiple sites. Tracking medical services utilization in this type of setting is difficult. To my knowledge, third party payers have not released this type of information to health care providers for comparison purposes. The present study also fails to assess the appropriateness of the patient's perceived need for medical care, since it made no comparison between the chief complaint and the physician's clinical findings.

The health care delivery system in the state of Tennessee is at a crossroads. The MA system was waived and a statewide managed care system (*TennCare*) was instituted in January of 1994. It will be interesting to compare rates of utilization of medical services and health care costs between the previous MA system and *TennCare.* Costs to the system, to those privately insured, as well as to the physicians who are obliged to provide care, should be assessed. The outcome of such an investigation could be used to assess the impact of health care reform on the efficiency, effectiveness, and degree of accessibility of health care services to the poor and previously uninsured.

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HELP FOR IMPAIRED PHYSICIANS

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Trauma Rounds

Blunt Hepatic Trauma: Trends in Nonoperative Management

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Introduction

Much due to its size, the liver is the organ probably the most frequently injured in abdominal trauma. The management of blunt liver trauma has undergone a significant evolution in the last 10 to 15 years. This change in management has been due largely to the increasing use of CT scanning in the diagnosis of intraperitoneal injury. In most major trauma centers, hemodynamically stable patients with no obvious indications for emergency laparotomy have CT scan of the abdomen for evaluation of intra-abdominal injury. CT scan, as opposed to diagnostic peritoneal lavage (DPL), is able to evaluate specific solid organ injury as well as the presence of intraperitoneal blood and an estimate of its quantity. Since the early 1980s, many authors have documented the successful use of CT-assisted diagnosis and the subsequent nonoperative management of pediatric hepatic trauma victims.[1]

The success achieved in the pediatric population in conjunction with the finding of many nonbleeding liver injuries at the time of laparotomy has led to the gradual adoption of nonoperative management of selected adult hepatic trauma victims. Although most trauma centers now practice at least some limited nonoperative management of blunt liver trauma, questions still remain regarding patient selection, indications for delayed laparotomy, complications, follow-up, and overall benefits of nonoperative management.[1-6]

Case Report

An 18-year-old man involved as an unrestrained passenger in a motor vehicle accident was brought to the Presley Regional Trauma Center by helicopter. On arrival, his vital signs were pulse 128/min, blood pressure 118/palp, respirations 28/min. He was somnolent, moved all extremities only to painful stimuli, and was assessed on the Glasgow Coma Scale as an 8. He was orotracheally intubated, IV access was attained, and he was resuscitated with crystalloid solution. Laboratory results showed a hematocrit of 36%, normal PT and APTT, normal electrolytes, and arterial blood gas PaO_2 198 mm Hg, PCO_2 32 mm Hg, O_2 saturation 99%, bases excess - 3.3. His physical examination was significant only for a small scalp laceration and his previously mentioned neurologic status. A chest x-ray revealed a small bilateral hemopneumothorax, for which bilateral tube thoracostomies were performed. Reassessment of the patient's vital signs showed pulse 88/min, blood pressure 128/82 mm Hg, and respirations 16/min. The patient was then taken immediately for CT scanning. CT of the head showed evidence of diffuse cerebral edema but with no focal lesion or midline shift. CT scan of the abdomen revealed a grade IV liver laceration involving the right lobe of the liver with free intraperitoneal blood in the perihepatic space, the paracolic gutters, and the pelvis. No other visceral organ injury was noted. The patient was then taken to the trauma intensive care unit where an ICP monitor was placed, and his hemodynamics and serial hematocrits were monitored. During the first 24 hours of hospitalization the hematocrit slowly drifted to 29% and the patient was transfused with two units of packed red blood cells. He remained hemodynamically stable throughout this time. Over the next few days, he again exhibited a slow drift in hematocrit to 30%. At this time, a follow-up CT of the abdomen revealed no significant change in the liver laceration, but significant resolution of the amount of free intraperitoneal blood. The patient remained hemodynamically stable, required no further transfusions, and his neurologic status so improved that on hospital day 7 he was transferred to the surgical ward. He remained in the hospital for another seven days, primarily for resolution and rehabilitation of his closed-head injury. On hospital day 12, another follow-up CT scan and a nuclear hepatobiliary scan showed some resolution of the liver injury, near complete resolution of the intraperitoneal blood, and no abnormal intrahepatic or extrahepatic bile collections. On hospital day 14 the patient was discharged to a rehabilitation facility. Follow-up at one month after discharge showed no clinical or laboratory abnormalities, and CT scan showed near complete resolution of the hepatic injury.

Discussion

In the recent past many nontherapeutic laparotomies were done for hepatic trauma as a result of positive findings on DPL. With the availability of reliable, high-quality CT scanners, it has become possible to successfully diagnose and to some extent quantitate the degree of intraperitoneal injury. This is not to say that DPL has lost its utility, but rather that there has been a narrowing of the procedural indications. With equivocal CT findings, change or unreliability in physical examination, or unexplained hemodynamic instability, DPL and/or immediate laparotomy remain the procedure(s) of choice.

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As regards evaluation of liver injuries by CT, attempts have been made to grade the severity of intraparenchymal injury as well as the extent of intraperitoneal hemorrhage. A grading system has been established by the American Association for the Surgery of Trauma for liver injuries.[7] Briefly, the hepatic injury is graded from 1 (minor capsular injury) to 6 (hepatic avulsion), with increasing grades correlating with increasing severity of parenchymal injury. In order to estimate the amount of hemoperitoneum, a scale was developed to correlate various blood-filled intra-abdominal spaces.[1] For example, the patient presented had blood in the perihepatic space, paracolic gutters, and the pelvis—estimated to be approximately 750 ml.

As with any new management protocol, proper application and patient selection is essential for successful outcome. Many authors have suggested various criteria for considering a patient for nonoperative management. Injury grade and amount of intraperitoneal blood as evaluated by CT, although useful in characterizing injuries, have been shown to be unreliable in selecting patients for successful nonoperative management of liver injuries.[1,3-5] At this time, it appears that the only prerequisite for entrance into a nonoperative management scheme is continued hemodynamic stability, usually defined as a systolic blood pressure greater than 90 mm Hg and a heart rate less than 110/min. Other factors that may play some role in patient selection include assessment of continuing transfusion requirements, which may be nonspecific depending on the type and degree of associated injuries, and the inability to obtain a reliable physical examination, i.e., head injury patients.[3,6]

The concern regarding physical examination may stem from a perceived need to evaluate for potential injuries missed on CT. This concern has not been borne out in the literature. No reported missed injuries have been identified in over 300 reported nonoperatively managed cases.[1-6]

Other potential complications of the nonoperative management of liver injury include need for delayed laparotomy, undrained intraperitoneal hematoma, intraparenchymal or extraparenchymal bile leak, abscess, and hemobilia. A review of recent literature has shown that at various institutions, a range of 6% to 55% of all patients with hepatic trauma are candidates for nonoperative management.[4,6] The rates of need for delayed laparotomy range from 0% to 10%.[2,6] The rate of complications resulting from the management is reported as 0% in most reviews but can range as high as 20%.[5] The frequency and mode of long-term follow-up in the management scheme is still unclear, but it is known that all but the most severe injuries resolve without sequelae.[4]

In addition to the obvious benefits of avoiding nontherapeutic laparotomy, it appears that those patients who are successfully managed nonoperatively have less transfusion requirements and shorter overall lengths of stay than those patients managed operatively.[1-6] These findings are despite the concerns of many that uncontrolled hemorrhage would go unchecked in patients managed nonoperatively and that prolonged periods of observation would lead to prolonged hospital stays.

In conclusion, victims of significant blunt trauma who are hemodynamically stable and without obvious need for laparotomy should have CT evaluation for potential intraperitoneal injuries. If a hepatic injury is identified, no other injury requiring operative intervention is found, and the patient remains hemodynamically stable, the patient should be considered a candidate for nonoperative management. Such patients should then be observed closely in an intensive care setting, with frequent determinations of vital signs, serial hematocrit determinations, and assessment of clinical status. Any significant alterations should be investigated in selected cases with laparotomy or repeat CT scan. Documented resolution should be confirmed on early follow-up CT scan at three to seven days, with further follow-up as dictated by the individual situation.

The use of nonoperative management should in no way be considered conservative. In fact, institution of such management schemes requires labor-intensive protocols that should be carried out by surgeons who appreciate and respect the demands and pitfalls associated with the operative approach to these injuries. ❑

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Vanderbilt Morning Report

Paradoxical Embolism

Case Report

A previously healthy right-handed 54-year-old man was admitted to St. Thomas Hospital with the acute onset of hemiparesis and dysphasia. He had returned home from a business trip at 1:30 AM, and gone to sleep. His wife found him at 5:00 AM with spastic motion of his left leg. By report, he was attempting to sit up and speak, having oro-lingular motion but without vocalization. His wife assisted him to stand, at which time he fell to the ground, unable to sustain his weight. Emergency medical service was summoned, and the patient was transported to the hospital.

The patient was married, with three children, working as a traveling salesman in the petroleum industry and living in the Middle Tennessee area. He traveled extensively for prolonged periods as a requirement of his employment. He had smoked a minimum of two packs of cigarettes daily for the past 47 years, and partook of alcohol socially. His review of systems was negative for previous neurologic events, claudication, palpitations, amaurosis fugax, tinnitus, vertigo, dyspnea, and disturbance in gait.

On admission, his temperature was 97.7°F, pulse 80/min and regular, respirations 20/min, and blood pressure 100/80 mm Hg. Examination revealed a moderately obese white man who was snoring softly. Examination of his eyes, lungs, heart, and extremities was unremarkable. Upon his arousal, neurologic examination revealed him to be alert and oriented appropriately to people and objects, although anomic. He recognized correct names when prompted. He accurately named shapes, numbers, and letters traced on his palm, but was unable to verbalize written text, and could not write fluent sentences or transcribe written text. He could, however, form written words non-fluently. Cranial nerves were intact with the exception of central paresis of VII on the right. Cerebellar function, gait, and station were all intact, and reflexes, muscle strength, and sensory examinations were all within normal limits. The Romberg sign was absent and the Babinski sign was negative.

Results of hematologic, coagulation, and blood chemistry analysis were all within normal limits. An electrocardiogram demonstrated sinus bradycardia at a rate of 56/min, with left axis deviation and evidence of a past inferior myocardial infarction. CT of the head without contrast failed to demonstrate any abnormality.

The patient was given 325 mg of aspirin and heparin for a presumed left-sided peri-insular ischemic episode. Initial studies included carotid Doppler examination, which showed no hemodynamically significant lesions. Transthoracic echocardiogram revealed evidence of left ventricular hypertrophy and minimal mitral regurgitation without evidence of thrombi or valvular vegetation. Subsequent transesophageal echocardiogram showed evidence of an interatrial septal aneurysm with moderate flow through the patent foramen ovale demonstrated by agitated saline; this was exaggerated during Valsalva maneuver. Doppler studies of both lower extremities demonstrated acute thrombosis of the right superficial femoral vein and chronic thrombosis of the left superficial femoral vein, with bridging vein involvement bilaterally. Clinically the patient improved, with complete resolution of all neurologic symptoms by hospital day 4. He was discharged on chronic warfarin therapy.

Discussion

Paradoxical embolism is defined as an arterial embolus originating from a venous thrombus passing through a hemodynamically significant cardiac right-to-left shunt, resulting in a clinically apparent embolic event, such as stroke. Until recently, paradoxical embolism was thought to occur infrequently. A definite diagnosis required documentation of the following: (1) right-to-left vascular communication (e.g., patent foramen ovale, atrial septal defect, or pulmonary arteriovenous fistula); (2) intermittent right-greater-than-left pressure gradient; (3) clinical evidence of embolus; and (4) documentation of venous thrombosis.[1]

Recent studies, using advanced echocardiographic techniques, have shown a high correlation between stroke in the young and patent foramen ovale (40% prevalence in the stroke group; 10% in healthy controls). Therefore, these authors believe documentation of coexisting deep venous thrombosis is unnecessary, as many are occult.[2,3] This issue is still controversial. A right-greater-than-left pressure gradient must be present in addition to a cardiac septal defect to explain cerebral emboli. In healthy patients, this would occur only during Valsalva's maneuvers.

It is generally believed that paradoxical embolism affects primarily the anterior (carotid) distribution of the cerebral circulation. Using transcranial Doppler to detect saline contrast in patients with patent foramen ovale, a recent study revealed that fully 75% had significant contrast noted in the posterior arteries. This suggests that paradoxical embolism to the posterior circulation may occur more frequently than has been recognized.[4]

In 1983, prior to the routine availability of Doppler echocardiography, Caplan et al[5] demonstrated that 35% of patients meeting the criteria for embolic stroke had no identifiable arterial or intracardiac source. It is possible that a significant percentage of these patients had paradoxical embolism due to occult venous thrombosis. This diagnosis should be pursued in such patients employing modern saline contrasted Doppler techniques.

In the past, multiple regimens have been attempted in the treatment of paradoxical embolism. While there

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Presented by Gregory S. Martin, M.D., medical resident, Vanderbilt University Medical Center, and Rufus Davis, M.D., chief medical resident, St. Thomas Hospital, Nashville.

is still no consensus, most authors would now recommend approximately ten days of intravenous heparin therapy (in the absence of contraindication to anticoagulation) followed by three to six months of warfarin therapy. If contraindications such as recent hemorrhagic stroke exist, then inferior vena cava occlusion is indicated. Rarely, recurrent embolism will require surgical repair of intracardiac defects.

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Hematochezia in an Elderly Woman

Case Report

An 85-year-old woman presented herself to St. Thomas Hospital complaining of bloody diarrhea. The past medical history was significant for rheumatoid arthritis, essential hypertension, and atrial fibrillation. The patient was in her usual state of health until three days prior to admission when she developed bloody diarrhea and postprandial "cramps" that were sharp and stabbing in quality, and localized in the left hemiabdomen. The patient denied fever, vomiting, or recent weight change. Admission medications included digoxin and clinoril. Physical examination revealed a blood pressure of 195/100 mm Hg, pulse 68/min, respirations 18/min, and temperature 98.2°F. The patient had an irregularly irregular cardiac rhythm. No murmur or rub was noted. The lungs were clear. Abdominal examination revealed normal bowel sounds and mild diffuse tenderness to palpation without guarding or rebound tenderness. There was no organomegaly. The stool was brown and guaiac-positive.

Admission laboratory data included a WBC count of 14,800/cu mm with no left shift, PCV 40.9%, sodium 122 mEq/L, potassium 3.1 mEq/L, chloride 90 mEq/L, bicarbonate 23 mEq/L, BUN 10 mg/dl, and creatinine 0.6 mg/dl. Coagulation studies were normal. An EKG revealed atrial fibrillation with a controlled ventricular response. Abdominal and chest radiographs were normal. Fluids were initially restricted, and the serum sodium became normal over the next two days. Fecal leukocytes, ova, and parasites were absent; stool cultures were negative. A colonoscopy, performed on the second hospital day, revealed extensive edema and friability of the splenic flexure and descending colon mucosa, findings considered consistent with the diagnosis of ischemic colitis. Throughout the remainder of the hospitalization, the patient had only minimal symptoms. Her diarrhea resolved within three days without further medical intervention.

Discussion

Ischemic colitis, more correctly called colonic ischemia,[1] is frequently the cause of intestinal disease in the elderly. Probable causes include both occlusive (embolic, thrombotic, postsurgical) and nonocclusive (congestive heart failure, arrhythmias, and anemia) phenomena. Ischemia is usually spontaneous (i.e., without obvious etiology); while it occurs in the presence of small vessel disease, angiographic studies rarely correlate with clinical disease. Of the antecedent events associated with colonic ischemia, the most clearly related is aortic reconstructive surgery.[2]

Colonic ischemia is a disease of the elderly. When postsurgical incidents are excluded, 90% occur in patients older than 60 years of age. Cases of colonic ischemia in the young have reportedly been associated with sickle-cell disease, coagulopathies, vasculitis, medications, and marathon running.[2]

Morphologic changes associated with colonic ischemia range from mild injury (mucosal and submucosal hemorrhage and edema) to frank gangrene. Moderate injury can produce ulcerations, crypt abscesses, and pseudopolyps. It can thus be confused with inflammatory bowel disease. The splenic flexure, descending colon, and rectosigmoid junction are most frequently involved, but disease of all segments of the colon has been reported.[3]

The classic presentation includes crampy lower abdominal pain, mild leukocytosis, and bloody diarrhea, though brisk bleeding requiring transfusion is rare. If peritonitis is not detected and the abdominal plain film is unrevealing, then diagnostic colonoscopy or barium enema (the most useful radiographic test in the diagnosis of colonic ischemia) should be performed. "Thumbprinting" on barium enema, characteristic of ischemia, will be noted in approximately 75% of patients with the disorder. CT can reveal bowel wall thickening, but this finding is neither sensitive nor specific. Therefore, CT is not recommended in the work-up of colonic ischemia. Mesenteric angiography rarely shows any significant occlusion and is generally unnecessary. It is useful only in ruling out small bowel ischemia caused by superior mesenteric artery

(Continued on page 106)

Presented by Aaron Milstone, M.D., medical resident, Steven Evans, medical student, Vanderbilt University Medical Center, and Rufus Davis, M.D., chief medical resident, St. Thomas Hospital, Nashville.

Oak Ridge Health Studies Move Closer To Finding the Answer About Health Risks

MARY LAYNE VAN CLEAVE, M.S.

Residents living in the area surrounding the Oak Ridge Reservation have diverse opinions about the impact that the Oak Ridge Reservation may have had on their health and the health of their neighbors. The University of Tennessee conducted a Knowledge, Attitudes, and Beliefs Survey for the Tennessee Department of Health (TDH) in the 11-county area surrounding the Oak Ridge Reservation. Fifty-three percent of the 3,269 survey participants responded "yes" to the question "Do you think that activities at the Reservation in Oak Ridge have created any health problems for people living in nearby communities?" Twenty-four percent said "no," and 23% were not sure. The TDH is taking the next step toward finding the answer.

In July 1991, the state of Tennessee initiated the $12.4-million Health Studies Agreement with the U.S. Department of Energy. The purpose of the project is to carry out independent studies of possible adverse health effects in people living in the vicinity of the Oak Ridge Reservation. The health studies focus on those effects that could have resulted or could result from exposures to chemicals and radioactivity released at the Reservation since 1942. To facilitate independence, a panel of experts and local citizens, the Oak Ridge Health Agreement Steering Panel, provides direction, recommendations, and oversight for the Oak Ridge Health Studies.

The Oak Ridge Reservation

The Oak Ridge Reservation was established in 1942 as part of the federal government's World War II effort to develop and produce the first atomic bombs. For 50 years, many different research and production activities have been performed on the 58,000-acre Reservation where the three large complexes, code named X-10, Y-12, and K-25, are situated. Initially, production of plutonium and enrichment of uranium for weapons components were the main objectives. Y-12 later produced and dismantled nuclear weapon components and enriched lithium for use in thermonuclear weapons. The three main complexes used and processed radioactive materials, including iodine, uranium, and cesium, and other chemically hazardous materials including mercury and polychlorinated biphenyls (PCBs). Some contaminants were released to the environment beyond the plant boundaries as a result of routine emissions to the air and surface water; waste disposal practices including burial, accidental releases, and events such as the draining of White Oak Lake.

The Dose Reconstruction Feasibility Study

Phase I of the Oak Ridge Health Studies project began in May 1992 and was completed in September 1993. The major focus of the first phase was the Dose Reconstruction Feasibility Study. This study was designed to find out if enough data exist about chemical and radionuclide releases from the Oak Ridge Reservation to conduct dose reconstruction studies. To complete the Dose Reconstruction Feasibility Study, the state awarded a contract to ChemRisk, a division of McLaren Hart Environmental Engineering Corporation in Alameda, California.

The Phase I feasibility study assessed the availability of information for estimating exposures of the public to chemicals and radionuclides released from the Oak Ridge Reservation. The Phase I researchers examined a portion of the enormous volume of historic data to identify the historic releases with the greatest potential to have caused harm to the health of the public.

The Dose Reconstruction Feasibility Study comprised a number of individual tasks. One of the tasks, identification of complete exposure pathways, was performed to identify plausible exposure pathways based on environmental conditions (e.g., location of surface water and groundwater, meteorology), potential for a contaminant to move from one medium (e.g., soil, water, air) to another, and the lifestyles, activities, and locations of the exposed population (e.g., gardening, water recreation). Another involved the evaluation of the likelihood of human contact with contaminated media and the existence of human activities leading to contaminant intake or exposure.

From the Tennessee Department of Health, Nashville. Ms. VanCleave is director of Environmental Epidemiology, Bureau of Health Services.

Other tasks went on to identify the contaminants to receive the highest priority in the dose reconstruction studies, based on potential to cause a health hazard to the public. The contaminants and activities receiving the highest priority included:

- the release of *iodine 131* and *iodine 133* during the years of 1944 through 1956 from Radioactive Lanthanum (RaLa) Processing at X-10;
- the release of *cesium 137* and other radionuclides from White Oak Creek (primarily in liquid wastes) from 1943 through the 1960s as a result of various chemical separation activities at X-10;
- the release of *mercury* during the years 1955 through 1963 from lithium separation and enrichment operations at Y-12; and
- the general release of *polychlorinated biphenyls* (PCBs) from electrical transformers and machining operations at K-25 and Y-12. (The period of time over which these releases occurred has not been established, but is likely associated with operations occurring more than ten years ago.)

It is important to note that this evaluation should not be considered as the definitive assessment of health hazards due to contaminant releases from the Oak Ridge Reservation. The findings of this feasibility study were useful for the purpose of focusing the current dose reconstruction phase of the health studies.

Dose Reconstruction Studies

The dose reconstruction phase that began in August 1994 will lead to estimates of the actual amounts or the "doses" of various contaminants received by people as a result of off-site releases. The scope of the $7.9-million contract awarded to ChemRisk includes completion of dose reconstruction studies for radioiodines, mercury, PCBs, and cesium and other radionuclides released from White Oak Creek.

Because a primary mission of the Oak Ridge operation was the production of uranium-235, it was surprising that the feasibility study did not rank uranium releases among the most important for further analyses. To be sure that it does not warrant further consideration, uranium was specifically targeted for further research in the dose reconstruction contract.

Health Outcome Studies

As a result of several meetings with the community, the Oak Ridge Health Agreement Steering Panel concluded that there is interest in health studies that not only calculate health risks, but also look for the occurrence of adverse health effects. Estimation of doses is an important step for several health study activities: determining the health risks faced by exposed populations, determining the feasibility of conducting epidemiologic studies, and determining whether health outcomes are related to radionuclide or chemical exposures.

To meet the panel's goal of continuously looking for opportunities to complete analytic epidemiologic studies, the state awarded a grant to the Division of Pharmacoepidemiology at Vanderbilt University to conduct an epidemiologic feasibility study. This study is scheduled to be completed in March 1995. This study will define health outcomes that could be associated with the priority contaminants released from the Reservation, characterize the data that are available to quantify these outcomes, assess the potential for collecting the data if it is not available, and determine the feasibility of completing epidemiologic studies for the priority contaminants. The Tennessee Birth Defects Registry and the Tennessee Cancer Reporting System will provide further data for assessment of health outcomes continuing concurrently with the dose reconstruction studies. ❑

Vanderbilt Morning Report . . .

(Continued from page 104)

occlusion.[4]

The majority of cases of colonic ischemia are self-limited. Symptoms resolve within 48 hours, and healing is seen within two weeks. The intensity of initial symptoms does not predict which patients will develop complications, including stricture, gangrene, and perforation.[1]

Management of uncomplicated cases is primarily supportive, including intravenous fluids and bowel rest. While antibiotics directed against fecal flora have been shown to be effective, corticosteroids have not. Digitalis, vasopressors, and other drugs that induce mesenteric vasoconstriction should be avoided. If symptoms worsen and evidence of peritonitis arises, laparotomy for possible resection is required.[2] ❑

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EKG Case of the Month

P-Pulmonale

JAYANTH H. KESHAVA MURTHY, M.D.; SHOBHA R. HIREMAGALUR, M.D.; and
DAVID R. GINN, M.D.

Case Report

A 57-year-old white woman came to our facility complaining of shortness of breath and orthopnea but without complaints of chest pain. The admission EKG is shown here (Fig. 1). Her echocardiogram showed a normal ejection fraction and no regional wall motion abnormalities; the left atrial size was 4 sq cm, and the pulmonary acceleration time was elevated at 90 msec. The pulmonary function tests showed FVC 1.58 L, FEV_1 0.57 L, FEV_1/FVC 36%, and peak expiratory flow 1.09 L. These findings suggest a very severe obstructive defect, and the low vital capacity may represent a coexistent restrictive defect.

Discussion

In what leads do you look for P wave abnormality on an EKG? What are the components of a P wave and describe a normal P wave? In leads I, II, III, aV_F and V_1 you look for P wave abnormalities on an EKG. The P wave is caused by the depolarization of the atria, the early portion by the right atrial activity, and the latter part by the left atrial activity. The normal P wave does not exceed 0.12 sec in duration and 2.5 mm in voltage.[1]

What are the criteria for right atrial abnormality? The criteria for right atrial abnormality are (a) tall, peaked P waves in leads II, III and aV_F (>2.5 mm in height in lead II), and (b) prominent peaked, diphasic, or markedly inverted P waves in lead V_1. This is called P-pulmonale. The P wave duration is normal, however, and the mean P wave vector in the frontal plane is between +75* and +90*.[1]

What are the criteria for left atrial abnormality? The criteria for left atrial abnormality are (a) a broad (>0.12 sec), notched P wave usually best seen in leads I and II, and (b) a wide (1 mm × 0.04 sec) terminal negative deflection in V_1. This is called P-mitrale. The broadened P wave results in an increased ratio of the P wave duration to the PR interval.[1]

What are the criteria for bi-atrial abnormality? The EKG should independently satisfy the criteria for both left and right atrial abnormality. The P waves will be notched and broad (>0.12 sec) in leads I and II, and will have a prominent negative component (exceeding 1 mm × 0.04 sec) in lead V_1. In addition, the P waves on lead II will be tall (>2.5 mm).[1]

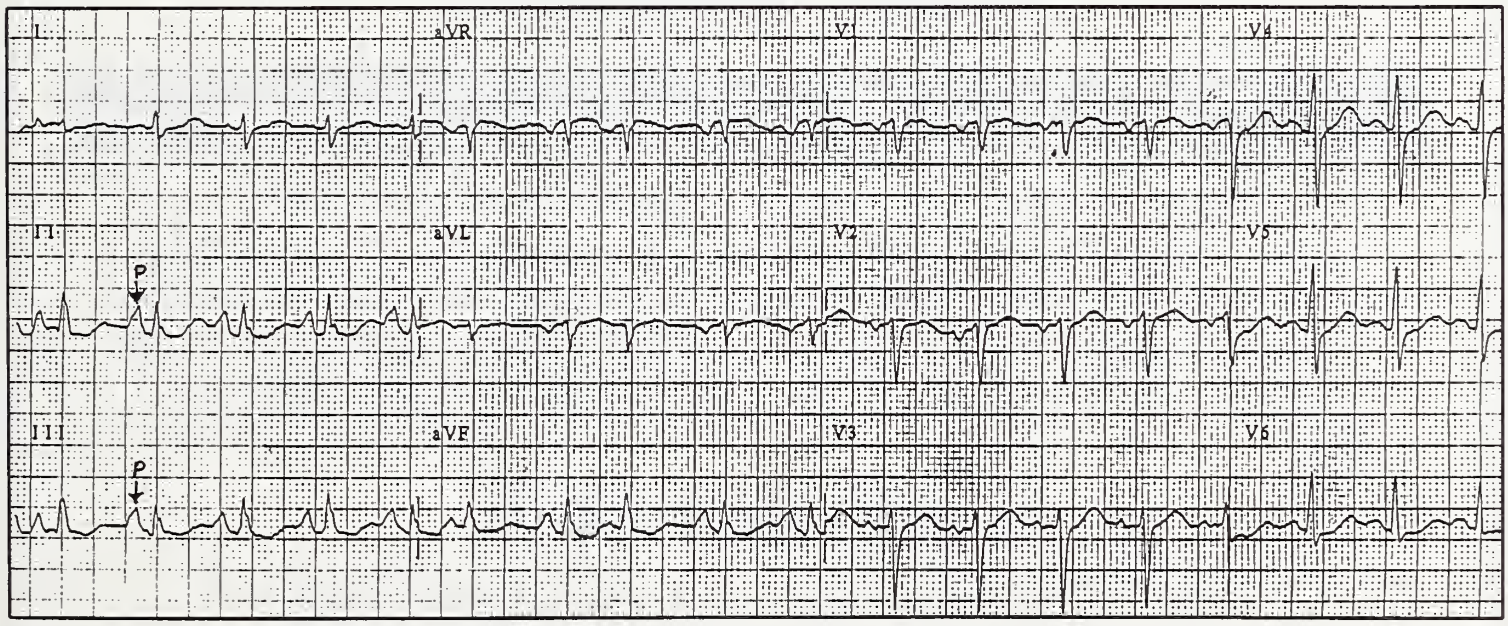

Figure 1. The EKG shows P wave measuring 5 mm in height and 0.12 sec in duration in leads II, III and aV_F, P wave axis of 81 degrees and diphasic P waves in V_1. The R waves in right to mid-precordial leads are small and show poor progression.

From the Department of Internal Medicine, James H. Quillen College of Medicine, East Tennessee State University, Johnson City.

TABLE 1

EKG FINDINGS OF LEFT VENTRICULAR HYPERTROPHY AND THEIR SENSITIVITY AND SPECIFICITY

EKG Findings	Sensitivity	Specificity
P wave duration × negative deflection in mm of 0.03 to 0.08 mm.sec[4]	×	80%
Notched P wave with duration >0.04 sec[5]	15%	100%
Negative P wave >0.04 sec in V_1[5]	83%	×
Foreshortened PR segment[5]	×	64%

What is pseudo-P-pulmonale and what is its significance? P-pulmonale pattern in the absence of right atrial enlargement is termed "pseudo-P-pulmonale." This has been seen more often in association with left heart disease, including coronary artery disease with angina pectoris, and less often in the absence of heart disease.[2] In "pseudo-P-pulmonale," the P wave reflects an increase in the left atrial component. Recent observations suggest that damage to the left atrium increases the right atrial vector and damage to the right atrium simulates left atrial enlargement.[3]

What is the most common cause of P-mitrale? P-mitrale is common in mitral valve disease, but the most frequent cause of P-mitrale is left ventricular disease, with the increased left ventricular end diastolic pressure reflected in atrium.[2]

What is the correlation between EKG findings of left atrial abnormality and echocardiographic findings? In one study relating the terminal force of P in V_1 to echocardiographically determined left atrial enlargement, the product of the duration of the P wave in lead V_1 in seconds and the negative deflection in mm of 0.03 to 0.08 mm.sec was associated with 80% correct diagnosis of left atrial enlargements (Table 1).[4] In another study of 57 patients with echocardiographically confirmed left atrial enlargement, the sensitivity of the various EKG criteria for left atrial enlargements varied from as low as 15% for notched P wave with interpeak duration >0.04 sec, to as high as 83% for negative P wave >0.04 sec in lead V_1. The specificity varied from 64% for a foreshortened PR segment to nearly 100% for notched P wave with interpeak of more than >0.04 sec (Table 1).[5] ❑

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Loss Prevention Case of the Month

Unanswered Questions—Somebody Pays

J. KELLEY AVERY, M.D.

Case Report

A 45-lb 5-year-old boy had had recurrent bouts of tonsillitis and otitis media virtually all of his life, and in the preceding year had been ill on six separate occasions, requiring antibiotics and absence from kindergarten with each episode. His physician had observed the progressive hypertrophy of the tonsils and adenoids and, because of the enlargement and the recurrent febrile bouts of tonsillitis and otitis media, had discussed with the mother the need to consider surgery. The decision was made and the surgery was scheduled.

Tonsillectomy was to be done as an outpatient procedure, and after appropriate education of the parents as to its risks and benefits, the child was admitted. After clearance by the anesthesiologist, routine preoperative medication was given and the procedure was done without incident. The operative note by the surgeon noted some "excessive" bleeding which was "easily" controlled by pressure and fulguration. Postoperative orders included Demerol 25 mg every three hours as needed, Phenergan suppository 25 mg every three hours as needed for nausea/vomiting, and other supportive measures. In the recovery room, an IV of 500 ml D5 1/4 NS was running. Orders were written by the anesthesiologist for IVs to follow, 500 ml D5 1/4 NS, 500 ml D5 1/4 NS, and another 500 ml D5 1/4 NS. On arrival in the recovery room the patient was described as unresponsive, breathing shallow, color good, lying on the right side. Ten minutes later 15 mg Demerol was given IM and 50 minutes later this was followed by another 10 mg Demerol IV and a 12.5 mg Phenergan suppository. He voided normally 250 ml clear urine, was reacting appropriately, and was discharged from the recovery room about two hours after the operation.

The patient vomited a small amount of bile colored emesis on three occasions about three hours postoperative and was given another 12.5 mg Phenergan suppository. Six hours postoperative the child was still having small amounts of bile colored emesis and the anesthesiologist was consulted. Reglan 2 mg and droperidol 0.25 mg IV was ordered as needed for nausea and vomiting, and was given. The order was not timed, the medication was not charted, and the physician did not see and examine the child prior to ordering the medication. Some time later, perhaps an hour, another 5 mg Demerol was given IV.

About one hour after the last medication was given the child was described as "resting comfortably," but very soon after this observation the mother called the nurse and reported that her child had suddenly gripped her hand very tightly and begun to breath very heavily. Respirations were described as "moist" and a "large amount of frothy bloody secretion" was aspirated from the throat. About eight minutes later, intubation was attempted by the respiratory technician, but was not successful, and the patient was immediately transferred to the operating suite. The attending physician and the anesthesiologist arrived about 30 minutes afterward. The child was being given 100% O_2 by bag. Pupils were "dilated" and the patient was "cyanotic." Intubation was accomplished immediately by the anesthesiologist. Color and vital signs improved. At time of intubation the O_2 saturation was recorded at 21%, becoming 88% in a matter of seconds. Chest x-ray revealed bilateral infiltrates. A sodium of 122 became 124 over the next hour with fluid resuscitation. O_2 saturation was 78% just prior to transfer to the intensive care unit, and deteriorated despite ventilatory support. Ventricular fibrillation occurred which was thought to be central in origin, and the patient was declared brain dead 24 hours after the operation.

A lawsuit was filed alleging negligence on the part of the attending physician, the anesthesiologist, and the institution.

Loss Prevention Comments

After a tragedy of this kind, everybody involved with the care of this patient suffers along with the family. Many facets of the postoperative care of this patient can be questioned. Were the postoperative orders for narcotics excessive, and was the staff too aggressive in its use? Did the combined use of the antiemetic, Phenergan, which is known to have some potentiating interaction with the narcotic, play a role in this death? Did the untimed order for the droperidol, which was not recorded as having been given, throw enough doubt as to the activities of the nursing staff and the anesthesiologist to be damaging to them in the lawsuit? Was the 2,000 ml of D5 in 1/4 NS enough to produce some fluid overload, driving the sodium down to dangerous levels? Should there have been more capacity in the hospital to get this patient intubated in a timely manner?

Almost certainly the death was due to massive pulmonary aspiration of gastric contents. When did this occur? Did medication cause or contribute to this complication? There can be no absolute answer to any of these questions, but all of them can certainly be seen to have had some adverse effect. While this is all speculation, and subject to differing opinions, the fact that the anesthesiologist did *not* examine this child after he had been consulted by the nurse and before ordering the additional medication is not in dispute! Had he come and examined the patient, would his orders have been any different or could he have intervened at that time and prevented this tragic outcome? There remains the *possibility* that, under those circumstances, the outcome could have been different. A large settlement charged to the anesthesiologist's corporation was negotiated, ending this very unhappy situation. ☐

Dr. Avery is chairman of the Loss Prevention Committee, State Volunteer Mutual Insurance Company, Brentwood.

The Case of the Month is taken from actual Tennessee closed claims. An attempt is made to fictionalize the material in order to make it less easy to identify. If you recognize your own case, please be assured that it is presented solely for the purpose of emphasizing the issues presented.

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president's page

VIRGIL H. CROWDER JR.

A Tribute to My Father

Each year at the annual meeting the speaker reads the names of our fellow physicians who have died in the past year. We stand for a few moments of silent tribute for our comrades. I wonder if we really understand the sacrifices made by the earlier generations of physicians that have made our medical world a better place to practice.

The role of the older physician was recently brought to my remembrance with the death of my father. He lived almost 91 years and practiced medicine for almost 60 years. My father finished medical school in 1929, and after a short internship moved to Lawrenceburg at the time of the great stock market crash.

His stories of these difficult times are memories that I will always cherish. Antibiotics were not available and pneumonia was truly a leading cause of death in the elderly population. The elderly in those days were people in their sixties. Tuberculosis, polio, and measles took their toll each year.

He opened an office on the town square; he had one rule. He saw each person who came, and he believed that if he saw everyone, enough people would pay to make his expenses and support his family. That rule is still in effect in our office, but it is now harder to live by due to third party payers and government interference in the doctor-patient relationship.

As the son of a physician who was a legend to the people of our county, I have been asked what I learned from my father. I think mainly that the work ethic that medicine requires was pointed out each day of his practice. During the war years he left home about 7:30 AM and usually returned for dinner about 6:00 PM. After dinner he would begin house calls, which usually lasted until midnight or later. This schedule was six days a week, and he had about two hours of office practice on Sunday.

When I went to college I knew that I did not want to be a physician. I majored in history and gave thought to becoming a constitutional lawyer but gradually was drawn back into medicine. The demanding schedule of medical school, internship, and surgical residency that followed was difficult at times, but still easier than the life of the rural physician in our state.

As we look at the multitude of problems facing us today, we should stop and thank our older physicians for showing us the way to face our problems.

Virgil H Crowder Jr. M.D.

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MARCH, 1995

editorials

Reflections on Things Ethical and Judicial

It being Christmastime when the AMA House of Delegates packs up and goes home each year from its Interim Meeting, your Editor is always hard put to come up with any sort of timely report reflecting its deliberations and policies. *AMNews* is the vehicle by which the members arrive at information regarding deliberations by the House. It is usually accurately reported, but there are always niceties that the news reporters, not being doctors themselves, either are ignorant of, or find certain subtleties too much for them. This leads to miscommunication with our constituents, and frequently to their confusion as to purpose and outcome. It is hard enough for the Board of Trustees and the councils to communicate with the House of Delegates, let alone with the media, even friendly ones. I intend to report here on only one of the sticky wickets, one that was held over, even if unintentionally.

The Judicial Council historically served the AMA as its supreme court, rendering opinions on judicial and ethical matters referred to it by the House. As advances in technology and changes in the medical practice environment have increasingly complicated the ethics of the practice of medicine, and with the Council consequently seeing its function becoming increasingly weighted toward ethical matters, it seemed only appropriate that such a change be reflected in its name. A few years ago, therefore, it was renamed the Council on Ethical and Judicial Affairs (CEJA). At about that same time it ceased operating as a supreme court, and began generating opinions based not on items referred to it by the House or other councils, but on its own perceptions of problem areas in the practice of medicine. They believed that the Council needed to address them, and therefore did, but in so doing, CEJA often set itself in direct opposition to practicing physicians, resulting in accusations of arrogance and insensitivity. The perception that the Council was deliberately operating in a vacuum, out of contact with practicing doctors, and was tending to pontificate *ex cathedra*, became difficult to escape.

Rather than strain my dwindling mental powers with reinventing the wheel, I am as Editor of this publication granting myself the privilege of restating here a couple of paragraphs more or less intact from an editorial I wrote after the 1992 Interim Meeting (*J Tenn Med Assoc* 86:124-125, 1993), when the Council's opinion on self-referral caused a divisiveness in the AMA House of Delegates that many believe could have been averted had there been proper communication between CEJA and the House. The matter made a lot of waves, and set in motion attempts to subjugate the Council to the House. In the end, pleas from a number of quarters won over the House, and with little opposition resolutions that would have accomplished that were all defeated, allowing the CEJA to pursue its deliberations free of political control.

The Council is made up of presidential appointees, one member being appointed to the Council each year by the President. The appointment is for a single seven-year term, and is based upon the applicant's wisdom and integrity. Upon his ratification by the House, the council member relinquishes his seat in the House, and becomes answerable only to his fellow council members and his conscience. Were it otherwise, the Council would be just another politically oriented body, and would thereby lose its effectiveness. As it is, it serves as the conscience for all of medicine, whether AMA members or not, and is internationally recognized in this role by governmental and regulatory bodies, among others, some of whom may have little use for the AMA or anything having to do with organized medicine. If the Council is to maintain its integrity, its opinions on professional ethics and biomedical matters must be protected from political pressure.

The House at that time chose to leave CEJA alone, with the proviso that with the collaboration of the Council on Constitution and Bylaws, CEJA would establish a channel of communication with the House that would inform it of matters the Council was considering or proposed to consider, and to invite members of the House to submit comments for their consideration on any of those topics. CEJA's failure to implement its instructions from the House to the satisfaction of a significant segment of the membership resulted in a sometimes almost verbatim replay of the previous year's activities in the Reference Committee on Amendments to the Constitution and Bylaws, and with similar results, except for a couple of important differences.

Virtually no one, including its sponsors, the Louisiana delegation (the resolution actually originated in the House of Delegates of the Louisiana State Medical Association, for transmittal by its AMA delegation), wished to politicize CEJA and subjugate it to the will of the House, and in fact there was no testimony in the reference committee favoring that. There was extensive testimony, though, urging CEJA to come out of its closet, becoming more sensitive and giving more attention to the needs of the profession, instead of expending so much of its energy on the theoretical needs of society based on the Council's perception of what might possibly result from the changing health care climate.

I think that with its second reprieve CEJA has finally gotten the message. At least, according to the response of its members it would seem to have. CEJA has agreed to do two things that will, in my estimation, largely eradicate the major sticking points between itself and the House. First, it has agreed to an open forum on items it is considering. Though that will not, and should not, constitute a reference committee to develop a consensus, it will apprise the Council of the views of the profession on dilemmas that are often very controversial, and potentially divisive of the profession at a time when unity is critical. It should also largely obviate the repeated demands from the House to CEJA for reconsideration of so many of its opinions.

The second has to do with problems arising from publication of the unadorned opinions of CEJA in a small booklet that for legal purposes becomes the AMA's code of professional conduct. There is besides the *Opinions* a considerable body of explanatory material that goes far toward mitigating the harshness of the bare opinions, but that material is published elsewhere, and legal and regulatory bodies seldom avail themselves of it. CEJA has agreed to publish the two together, thus removing or at least tempering a major dissatisfaction of the membership with the Council.

The critics having vented most of their displeasure in the reference committee hearings, and indeed for the most part having accomplished their goals, there was no debate on the item on the floor of the House, and the substitute amendment offered by the Louisiana delegation embodying the above provisos was unanimously adopted. If CEJA follows the course that it has plotted for itself, the matter should be closed.

If CEJA reneges, in the immortal words of Yogi Berra it will be *deja vu* all over again.

J.B.T.

Editorial Responsibility

> . . . all liars shall have their part in the lake
> which burneth with fire and brimstone.
> *The Holy Bible,* Rev. 21:8
>
> I said in my haste, "All men are liars."
> Psalm 116:11

Before I go any further, I wish to clear up a misconception that is based on the misconstruction of a quotation. It is to the effect that *The Bible* says "all men are liars." Though there is ample internal evidence that its writers and its author, assuming as I do that its author is God, think that, the passage used as its source is, as stated, simply an assumption of King David, which he precedes with the confession that the judgment was a hasty one. *The Bible* does go on, though, to consign all unredeemed liars to the lake of fire.

Judging from what I see around me, I have to think that though David may have arrived at his judgment without what he thought was due consideration, he couldn't have been far off. I have never been very impressed myself with mankind's steadfast adherence to verity, and I am persuaded that even such unsteadfast adherence as might have existed nearer the opening of my 74-year tenure has progressively deteriorated over the past few decades. It may be only that I have become more cynical, but there is a lot of evidence to the contrary.

Benjamin Franklin first rose to prominence as a newspaper man, and he had a lot to say about editorial responsibility and yellow journalism. If from wherever he now rests he is observing the present passing scene, it must be with great consternation. In the first place, the news media have come to view themselves not as reporters of fact and reliable commentators on those facts, but as purveyors of entertainment. They believe, obviously, I guess, that such is what the public wants, and they may be right. Maybe the public's highest priority is indeed titillation. If it is, the newspapers and news broadcasts should not be the places they would expect to find it. On the other hand, since the "bottom line" rules as king these days, and since the so-called "news" media see themselves as being in competition with other forms of entertainment, they have gone all out to cast themselves in that light. Not only do they snoop; they also lie. And they do it with a straight face, and apparently in good conscience. I firmly believe that it is for such as they that the aforementioned lake has been prepared. They had better repent while there is still time, though I don't see that happening. There is too much money at stake. Connie Chung's take each year, for instance, runs into seven figures to the left of the decimal point.

Before Connie went into competition with Oprah and company, I was one of her greatest admirers. She is intelligent, witty, and pretty to look at. (Connie, if you take that as a sexist remark, make the most of it. There's more to come. You are also a liar. Since that is documented, there isn't much you can do with that one.) For those of you who have been on the moon for a while, what Connie did was to wheedle from the mother of Rep. Newt Gingrich, Speaker of the U.S. House of Representatives, under the guise of privileged information, and therefore—reporter's honor!—not to be repeated under any circumstances, the *whispered* information that her son, in answer to her question about what he thought of First Lady Hillary Clinton, said, "She's a bitch."

Now I don't intend to get into a debate over the merits of the case against Mr. Gingrich as to whether or not he should have said what he did about the First Lady. But to his *mother*? And in answer to *her* question? I mean, really . . . *after all*! Too, that is such a widely held opinion that once it became public not much was made of it except by a few liberal columnists. Nearly everybody hears much worse things than that said about Mrs. Clinton whenever her name comes up. (Don't ask me what. Editor's honor, don'tcha know! Also, there are some words a gentleman just doesn't use.) Apparently neither CBS nor Connie thought much about it either, since they waited a while to use it. Since they ultimately did use it, the delay couldn't have been for ethical reasons.

My complaint, and it is a serious one, is against CBS and Connie Chung. That the comment was repeated at all would be a deplorable breach of reportorial and editorial ethics if such a thing existed at the network. But then, I suppose anything can happen at a network that staged the Chicago race riots in the sixties because nothing much newsworthy was going on at the time. I thought CBS might have outgrown that, but I suppose one should expect that anything might happen with a network that continues to tolerate Dan Rather. I am disappointed in Connie, though. I had thought better of her than that. And saddest of all, she doesn't have to do it to make a living.

On the other hand, having said all that, excepting that each individual must be, and is, ultimately accountable for his, or in this case, her, own actions, what I really fear is that Connie is simply a child of her times. Somewhat oversimplified, to be sure, Existentialism, the brain child of Jean Paul Sartre, and the operational philosophy guiding much of middle to late 20th century action, denies the existence of absolutes, and makes moral choices subject to the situation, so that whether one tells the truth or not depends on the relative merits in the eyes of the beholder of telling the truth versus bearing false witness under the circumstances at hand. That is simply an expanded version, of course, of society's perennial acceptance of "little white lies" as a mechanism for preventing civil and domestic strife, while at the same time denouncing "black lies," the legal term for which is perjury; or bearing false witness under oath, that can land one in jail. These days, the only constraints on falsehood appear to be whether or not it can get you in trouble. Connie and CBS were well aware they had lied. They simply thought it would not get them in trouble. I wouldn't want to bet that in the long run it will. I predict that the whole matter will simply blow over, and neither Connie nor CBS will be any the worse for wear. The upshot will be only that it will further erode respect for the truth, if that can indeed be eroded any further. The game of politics as currently played out would cast doubt on that possibility. Few of its spectators any longer expect the truth except by accident.

They say every dark cloud has a silver lining. This one's is that it has relieved my mind about whether or not it is only that I am becoming cynical.

J.B.T.

Precious Memories

People have short memories. Take, for instance, conversations like this one, which abound:

"I thought he died."

"No, I don't think so."

"Yes, I'm sure he did."

This can go on and on, repeated *ad nauseam*, until the debaters get tired, and still the debate remains unsettled. There's no way to settle it, in fact, and maybe even keep what started out as a friendly conversation from degenerating into a quarrel, unless someone can say either (a) "I know he died because I went to his funeral," or (b) "I know he didn't die, because I had lunch with him yesterday." (The time element there has to be short, because few people completely trust their own memory, let alone anyone else's.)

On the other hand, with computers it's something else again. Barring an accident in which its memory is wiped out, a computer never forgets, unless it is made to. Not only that, it coughs up whatever was fed it; hence the term GIGO (garbage in, garbage out). Unlike human memory, its memory is controllable, but that control requires specific actions that take time, and which therefore more frequently than not get ignored. I receive, for instance, vast quantities of junk mail addressed to *John* (with the middle initial deleted, as seems customary these days) *Thomison Md.* When the salutation is not "Dear John" (a familiarity that has also become all too prevalent), it is "Dear Mr. Md:" That such an error has become widespread is evidence of another computer travesty: proliferation of data. Mailing lists get passed around, and GIGO abounds, or as a colleague of mine is fond of observing, "Ignorance is rampant."

There's more. Whenever my middle initial does happen to be inserted, it is as likely to come up W, R, M (some of the ones that have actually appeared) or something else other than the "B" that is correct. I have sometimes tried, without success, to get one or another of those changed to "B," since it matters to me in instances where my name has some importance, which actually isn't often. It has become obvious to me that although I care, nobody else does, so I have largely given up on it except for legal documents.

With that fresh in my memory, I could therefore imagine, at least dimly, the consternation that must have welled up in Chet Atkins' breast on his learning that he had died. When Mark Twain was confronted with a similar situation, he commented that the reports of his death had been greatly exaggerated. The dissemination of that information, however, was largely his own, since the obituary, if memory serves me correctly, which it may not, appeared in one of the Hartford, CT newspapers, scarcely worldwide coverage. Not only that, it would have taken a lot of effort to spread the word—*any* word—beyond the northeastern corridor.

Not today. A few careless words by some thoughtless dunce on the late newscast of a hick TV station were picked up and in a trice widely disseminated, not once but several times during the night, by NBC, so that in no time at all the world had been apprised of the death of the world renowned guitarist. Being Mr. Nice Guy, Chet said first that he wished he had seen the program so he could find out what they would say about him when he really did die. Then, doubtless prompted by his agent, he added that it was a terrible, terrible thing they had done. His name would, he said, doubtless be automatically removed from computer listings of artists available for bookings. Now, if they had done that to me, which they wouldn't have, but just pretending they had, it would have been of no consequence. But implicit in Chet Atkins' statement was the potential loss of *big* bucks. Even though disclaimers and retractions have been flooding the media ever since, Mr. Atkins' name is still, if my own experience with computer lists is any indication, not infrequently going to come up missing during searches for artists to fill engagements. Since the lawyers of all parties also know that, having doubtless had computer experiences similar to mine, I predict that after some quiet negotiations we will never hear about, Mr. Atkins' losses will turn out to be negligible compared to those of NBC and its Charlotte affiliate. It being Christmas, I trust the name of the careless reporter will not with more accuracy replace that of Mr. Atkins, though I shouldn't like to bet any money on that.

The only winners in all of this, except, of course the lawyers, who always win, are the public of Chet Atkins, of which I am a staunch and enthusiastic member. We still have our favorite picker with us, and the media as usual wind up the goat, though that verity will likely escape them, and will therefore not promote accuracy in subsequent reporting.

J.B.T.

in memoriam

John Patrick Conway, age 75. Died December 27, 1994. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

Bruce Emerson Jones, age 43. Died January 7, 1995. Graduate of Vanderbilt University School of Medicine. Member of Nashville Academy of Medicine.

David F. Moore, age 74. Died November 10, 1994. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

Warren C. Ramer Sr., age 80. Died December 25, 1994. Graduate of University of Tennessee College of Medicine. Member of Consolidated Medical Assembly of West Tennessee.

Harvey C. Reese Jr., age 69. Died November 27, 1994. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

Dillard M. Sholes, age 79. Died December 30, 1994. Graduate of Medical College of Virginia Commonwealth University School of Medicine. Member of Washington/Unicoi/Johnson County Medical Association.

C. Frank Yates, age 80. Died December 6, 1994. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

new members

The *Journal* takes this opportunity to welcome these new members to the Tennesssee Medical Association.

BEDFORD COUNTY MEDICAL SOCIETY
Domenic M. Canonico, M.D., Shelbyville

BRADLEY COUNTY MEDICAL SOCIETY
Michael M. O'Malley, M.D., Cleveland

CHATTANOOGA-HAMILTON COUNTY MEDICAL SOCIETY
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Wilma C. Proffitt, M.D., Signal Mountain
Rebecca M. Swiff, M.D., Harrison
William A. VanHorn, M.D., Cleveland

CONSOLIDATED MEDICAL ASSEMBLY OF WEST TENNESSEE
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Robert A. Hollis, M.D., Jackson

GREENE COUNTY MEDICAL SOCIETY
Kim Marie Manning, M.D., Greeneville

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Patricia W. Lee, M.D., Knoxville
Gabriel Ojeda, M.D., Knoxville
Russell E. Rotondo, M.D., Knoxville

MEMPHIS-SHELBY COUNTY MEDICAL SOCIETY
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Lea Mary Bannister, M.D., Memphis
Melrose Ingle Blackett, M.D., Memphis
Randall Browning, M.D., Memphis
Marc Joseph Marcellus Crupie, M.D., Germantown
Keith G. Davies, M.D., Memphis
Jordan William Eggers, M.D., Germantown
Paul Bryan Hill, M.D., Memphis
Jeffrey Stone Kaplan, M.D., Memphis
Douglas Lawrence Karmel, M.D., Memphis
Scott M. Kelly, M.D., Germantown
Dean Anthony Klug, M.D., Memphis
Peter B. Lindy, M.D., Memphis
Rich L. McKenzie, M.D., Memphis
James C. Metcalf Jr, M.D., Memphis
Melvinie E. Seymore, M.D., Memphis
Maurice Mell Smith, M.D., Memphis
Stephen L. Winbery, M.D., Memphis
Frank S. Wong, M.D., Memphis

(Students)
William Edwards

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NASHVILLE ACADEMY OF MEDICINE
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Ted A. Behar, M.D., Brentwood
Susan Briley, M.D., Nashville
J. Stuart Crutchfield, M.D., Nashville
Diane Thompson George, M.D., Nashville
Elwyn Mancel Grimes, M.D., Nashville
Ralph James LaNeve, M.D., Nashville
Susan Alice Murphy, M.D., Nashville
Lee Anne Faulkner O'Brien, M.D., Nashville
Philip Rosenthal, M.D., Nashville
Douglas A. Waldo, M.D., Nashville

(Students)
Kristen Leah Albright
Michael Abraham Alemen
Michael Lee Bobo
Anderson Burton Collier III
Patrick Cooksey Crowne
Timothy A. Mical Derring
E. Blake Fagan
John Paul Freeman
Clark H. Galbraith
R. Alden Milam IV
Joseph J. Naoum
Martin Newman
William A. Preston
Kelly Bowden Richardson
Michael Craig Thigpen
Jon Wongsurawal

PUTNAM COUNTY MEDICAL SOCIETY
Timothy J. Flynn, M.D., Cookeville

ROANE-ANDERSON COUNTY MEDICAL SOCIETY
Charles Gregory Sewall, M.D., Oak Ridge
Jeffrey Alan Uzzle, M.D., Oak Ridge

RUTHERFORD COUNTY/STONES RIVER ACADEMY OF MEDICINE
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Henry J. Goolsby III, M.D., Murfreesboro
Robert Lee Knox, M.D., Murfreesboro

SULLIVAN COUNTY MEDICAL SOCIETY
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John Gregory Griffith, M.D., Bristol
Clair S. Hixson, M.D., Kingsport
Sharon Ann Jackson, M.D., Kingsport
Charlotte S. Keene, M.D., Kingsport
James Jay Merrell, M.D., Kingsport

SUMNER COUNTY MEDICAL SOCIETY
Duane E. Harrison, M.D., Madison

WARREN COUNTY MEDICAL SOCIETY
B. Jeffrey Wallis, M.D., McMinnville
Rodger J. Zwemer Jr, M.D., McMinnville

personal news

Gary Bunch, M.D., Oak Ridge, has been certified as a Diplomate of the American Board of Surgery.

Claude H. Crockett Jr., M.D., Bristol, has been certified as a Diplomate of the American Board of Facial Plastic and Reconstructive Surgery.

Jane Anne W. Gotcher, M.D., Cookeville, has been certified as a Diplomate of the American Board of Family Practice.

TMA Members Receive AMA Physician's Recognition Award

The following TMA members qualified for the AMA Physician's Recognition Award during December 1994. This list, supplied by the AMA, does not include members who reside in other states.

Physicians can receive the PRA certificate valid for one, two, or three years. For the one-year award, physicians report 50 hours of continuing medical education, including 20 hours of Category 1; for the two-year award, physicians report 100 hours of CME, including 40 hours of Category 1; for the three-year award, physicians report 150 hours of CME, 60 of which are Category 1. Each application for the PRA must also verify participation in Category 2 CME activities.

Samir Al-Kabbani, M.D., Knoxville
John S. Burrell, M.D., Lake City
Thomas A. Currey, M.D., Memphis
Robert M. Glasgow, M.D., Bristol
C. Gary Jackson, M.D., Nashville
Michael L. Pool, M.D., Knoxville

announcements

CALENDAR OF MEETINGS

NATIONAL

Apr. 5-9	American Association for Pediatric Ophthalmology and Strabismus—Orlando
Apr. 6-8	American Surgical Association—Chicago
Apr. 7-9	American Society of Abdominal Surgeons—Las Vegas
Apr. 9-13	American Society for Investigative Pathology—Atlanta
Apr. 9-13	American Society for Pharmacology and Experimental Therapeutics—Atlanta
Apr. 19-23	Mid-America Orthopaedic Association—Palm Beach, Fla.
Apr. 22-27	American Association of Neurological Surgeons—Orlando
Apr. 22-27	American Society of Clinical Pathologists—Orlando
Apr. 23-26	American Association for Thoracic Surgery—Boston
Apr. 23-26	Southwestern Surgical Congress—San Antonio
Apr. 26-29	American Cleft Palate-Craniofacial Association—Tampa
Apr. 26-29	American College of Medical Quality—San Diego
Apr. 28-May 4	American Society for Head and Neck Surgery—Palm Desert, Cal.
Apr. 29-30	American Laryngological Association—Palm Desert, Cal.
May 3-5	American Academy of Facial Plastic and Reconstructive Surgery—Palm Desert, Cal.
May 4-6	American Society for Clinical Nutrition—Pan Pacific, San Diego
May 4-6	Society of General Internal Medicine—Hyatt, San Diego
May 5-7	Christian Medical and Dental Society—Radisson, Denver
May 5-8	American Federation for Clinical Research—Hyatt, San Diego
May 5-8	American Society for Clinical Investigation—Marriott, San Diego
May 5-8	Association of American Physicians—Marriott, San Diego
May 6-8	American College of Radiation Oncology—Hyatt, Washington, D.C.
May 6-10	Society of Cardiovascular Anesthesiologists—Marriott, Philadelphia
May 6-10	Society of Teachers of Family Medicine—Sheraton, New Orleans
May 7-10	Society of Neurological Surgeons—Massachusetts General Hospital, Boston
May 7-11	Aerospace Medical Association—Disneyland, Anaheim, Cal.
May 7-11	Ambulatory Pediatric Association—Convention Center, San Diego
May 7-11	American College of Obstetricians and Gynecologists—Marriott, San Francisco
May 7-13	American Academy of Neurology—Seattle Convention Center & Sheraton
May 8-12	American Pediatric Society—Marriott, San Diego
May 10-16	American Academy of Environmental Medicine—Doubletree, Houston
May 11-14	American Association for the History of Medicine—Holiday Inn, Pittsburgh

May 11-14	American Psychoanalytic Association—Hyatt, Chicago
May 14-17	American Group Practice Association—Marriott, Washington D.C.
May 14-17	American Society for Gastrointestinal Endoscopy—San Diego
May 14-19	Association for Research in Vision and Ophthalmology—Convention Center, Ft. Lauderdale
May 17-21	American College of Cryosurgery—Hyatt, Hilton Head, S.C.
May 17-21	American Society for Dermatologic Surgery—Hyatt, Hilton Head, S.C.
May 17-21	American Society of Head and Neck Radiology—Hilton & Towers, Pittsburgh
May 18	American Society of Contemporary Medicine & Surgery—Drake, Chicago
May 18-21	American Academy of Psychoanalysis—Doral Beach Resort, Miami
May 20-24	American Thoracic Society—Sheraton, Seattle
May 20-25	American Psychiatric Association—Convention Center, Miami Beach
May 20-26	American Industrial Hygiene Association—H. Roe Bartle Hall, Kansas City, Mo.
May 21-23	American Trauma Society—Hilton, McLean, Va.
May 21-24	Society for Academic Emergency Medicine—Marriott Rivercenter, San Antonio
May 21-25	American Society of Microbiology—Washington, D.C.
May 21-27	American Society of Neuroradiology—Sheraton, Chicago
May 24-27	American Association of Suicidology—Biltmore, Phoenix
May 26-30	American Fracture Association—Caribe Hilton, San Juan, P.R.
May 30-June 3	American Association for Mental Retardation—Hilton, San Francisco
May 31-June 3	American College of Sports Medicine—Minneapolis

STATE

Apr. 6-9	TMA 160th Annual Meeting—Stouffer Renaissance Nashville Hotel/Nashville Convention Center
May 30-June 4	American Sleep Disorders Association—Opryland Hotel, Nashville

Actions of the Tennessee State Board of Medical Examiners

November 1994

Name: Helmut K. Harnisch, M.D. (Lewisburg)

Violation: Gross malpractice; unprofessional, dishonorable, or unethical conduct; fraud or deceit in the practice of medicine.

Action: License suspended for one year; must complete six months of additional family practice training.

(This action was taken in November 1994, but was not reported with other November actions.)

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TMA Alliance Report

Partners in Medicine—Making a Difference

Sharing common goals and interests creates bonds, and in Rutherford County shared goals continue to strengthen the relationship between the Rutherford County/Stones River Academy of Medicine and its Alliance. In our community these two organizations are working as partners in medicine by supporting teen health, improving the public perceptions of physicians and their families, and staying abreast of the waves of change in health care and legislative reform.

One of the most successful joint projects of the Rutherford County/Stones River Academy of Medicine and its Alliance is the teen health workshop. The year 1995 will be the fifth consecutive year that the Alliance, supported and physically assisted by the medical society, has conducted a teen health workshop. On May 10 all of the seventh graders in Rutherford County (approximately 2,000) will be bussed to Middle Tennessee State University. Their day will be filled with information from physicians and counselors on topics concerning teen health. Students will hear area physicians present information on self-esteem and prevention of teen suicide, violence and trauma, substance abuse, and teen sexuality. Each student will also have an opportunity to choose from 20 other topics.

We believe this workshop is not only a valuable gift to our community, but also improves the public perception of physicians and their families. It would be impossible for our 80-member Alliance to take on this project without the full support of our medical society. They cover the majority of the expenses of this day, including the cost of the busses, but most importantly, they give their time. Approximately 20 of our physicians are at each workshop presenting information, introducing speakers, and offering their labor and support. Since these teenagers face difficult daily choices, it is our goal to arm them with accurate information. We also want to communicate that the medical community is dedicated to teen health because we care about them and believe strongly in the preciousness of their lives. This is a major partnership for our Alliance, the medical society, and the community.

Several years ago our medical society recognized that the issues confronting the medical community have major impact on the partnership between the physicians and their spouses. We also have committed ourselves to staying abreast of change in health care. The medical society now invites spouses to each of its meetings where issues such as tort reform, third party payers, and legislative issues are discussed. Sharing this information promotes a stronger bond in understanding these issues and the pressures that these issues place on the medical marriage partnership. These meetings also allow for dates with our spouses.

Another important partnership in this community was strengthened by the election of Mary Ann Eckles to the state legislature. She has served as county and state legislative chairman for the Alliance and her election affords our Alliance and our medical society a partner with a strong voice and an understanding ear in our state government.

In Rutherford County we accept the challenge of our state president, Vanessa Clark, to allow our spouses to practice medicine while we work as ambassadors for medicine in our community. We believe that as partners in medicine we are making a real difference. ☐

Marcia Young, President
Rutherford/Stones River
Medical Alliance

Sleep and its Disorders

May 30 - June 4, 1995 - Opryland Hotel
The American Sleep Disorders Association and the Sleep Research Society's joint annual meeting will be held in Nashville. The 3 1/2 days of meetings consist of symposia, special lectures and abstract sessions. Preceded by 2 days of educational courses the program will enable pulmonary physicians, neurologists, psychiatrists, and others with an interest in sleep disorders to focus on their special interests or broaden their knowledge. Special topics include:

- ☐ Hypnogenic Effects of Melatonin
- ☐ Epidemiology of Sleep Apnea
- ☐ Daytime Sleepiness
- ☐ Narcolepsy
- ☐ Sleep in the Elderly
- ☐ Pharmacology & Sleep

CME credits will be provided for physicians attending. For more information contact the APSS Annual Meeting Office at (507) 287-6006 x 862.

TMA continuing medical education opportunities

TMA is accredited by the Accreditation Council for Continuing Medical Education (ACCME) as a sponsor of continuing medical education for physicians. Nonaccredited organizations may request TMA's joint sponsorship of CME activities. As an accredited sponsor, TMA is authorized to designate certain CME activities for credit in the AMA Physician's Recognition Award Program.

TMA is recognized by ACCME as the accreditor of institutions in Tennessee conducting intrastate CME programs. Any organization conducting such programs may apply to TMA for accreditation as a sponsor of CME.

Inquiries regarding TMA joint sponsorship of CME or application for accreditation as a sponsor of CME should be made in writing to: Director of Continuing Medical Education, Tennessee Medical Association, PO Box 120909, Nashville, TN 37212-0909.

IMPORTANT NOTICE

Published in this section are many educational opportunities which come to our attention which might be of interest to our membership. As some of these are very long, full year schedules, and others are detailed descriptions of courses, in order to conserve space, most of them will be published in only one issue of the Journal.

IN TENNESSEE

VANDERBILT UNIVERSITY MEDICAL CENTER

Clinical Training Program

The doctor and faculty plan an individualized program to meet the physician's practice needs. This may include contact with patients, participation in clinical rounds and diagnostic procedures, interaction with faculty and housestaff, access to the Medical Center Library and other learning resources, and other benefits of a preceptorship. AMA/PRA Category 1 credit is provided for each hour of participation. Physicians *must* be licensed and be in active practice with evidence of liability coverage.

Ongoing Rounds and Conferences

Arrangements can be made for licensed practicing physicians to attend for credit.

Special Conferences/Seminars

Detailed brochures for the following courses are available. In some cases, registration numbers are limited.

Apr. 18	Laser Assisted Uvulo-Palatoplasty: A New Treatment for Snoring
Apr. 20-22	Lasers in Otolaryngology-Head and Neck Surgery
May 18-19	Advanced/Functional Endoscopic Sinus Surgery Workshop 1995
May 18-21	12th Annual Family Medicine/Primary Care Update
May 19-20	Phono Surgery Tutorial and Hands-On Workshop
May 25-27	19th Annual Sonography Symposium
June 16-17	Laryngeal Endostroboscopy
July 2-6	12th International Congress of Nephrology—Madrid, Spain
July 18-21	18th Annual Contemporary Clinical Neurology Symposium—Hilton Head, S.C.
Aug. 3-4	Advanced/Functional Endoscopic Sinus Surgery 1995
Aug. 29	Laser Assisted Uvulo-Palatoplasty: A New Treatment for Snoring
Oct. 27-28	Laryngeal Endostroboscopy
Nov. 2-4	Lasers in Otolaryngology-Head and Neck Surgery

For information contact Division of CME, Vanderbilt University School of Medicine, D-8211 MCN, Nashville, TN 37232, Tel. (615) 322-4030.

MEHARRY MEDICAL COLLEGE

Extended Continuing Education Program

Arrangements have been made with many services and departments in the medical school to allow practicing physicians to participate in the service's activities for a period of one day to one week. This program provides an opportunity for physicians to study in depth for a specified period. The schedule of activities is individualized in response to the physician's request by the participating department. The experience includes conferences, ward rounds, audiovisual materials and contact with patients, residents and faculty.

Fee: $75 per day or $275 per five-day week of educational experience including lunch and parking at Meharry Medical College. *Credit:* AMA Category 1 of the Physician's Recognition Award, AAFP, and Continuing Education Units from Meharry Medical College. *Application:* For information contact Henry A. Moses, Ph.D., Director of Continuing Education, Meharry Medical College, 1005 D.B. Todd Blvd., Nashville, TN 37208, Tel. (615) 327-6235.

UNIVERSITY OF TENNESSEE

Continuing Education Schedule

Memphis

Apr. 8	Pediatric Orthopaedics
June 1-2	General Surgery Update
Aug. 7-12	Contemporary Issues in Obstetrics and Gynecology—Destin, Fla.
Aug. 23-26	Pulmonary and Critical Care Medicine—Destin, Fla.
Sept. 14-15	27th Conference on the Mother, Fetus, and Newborn

Knoxville

Apr. 27-29	4th Critical Care Symposium—Orlando
May 4-6	18th Annual Family Practice Update and Review Course—Gatlinburg
June 13-14	Pediatric Advanced Life Support Provider's Course—Gatlinburg
June 15-17	40th Great Smoky Mountains Pediatric Seminar—Gatlinburg
June 22-24	10th Annual Smoky Mountains Infectious Diseases Conference—Gatlinburg
Oct. 30-Nov. 1	14th Annual Smoky Mountains Seminar in Obstetrics and Gynecology—Gatlinburg

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Lyme Borreliosis

TIMOTHY R. OESCH, M.D.

Introduction

Lyme disease was first identified in 1975 in Old Lyme, Connecticut.[1] The causative agent, a spirochete, was discovered in 1982, cultivated in 1983, and established as the etiology of the various symptoms of Lyme disease in 1984.[1-3] Burgdorfer[4] received credit for first identifying the causative agent, which was thereby named in his honor—*Borrelia burgdorferi*. The infective spirochete is passed to humans from ticks, most commonly Ixodes dammini (deer tick), and has not been shown to be transmitted via air, food, water, sexual contact, or directly from wild or domestic animals.[1,5,6] In theory, Lyme disease could spread through blood transfusions or other contact with infected blood or urine, but no such transmission has been documented.[1]

Clinical Manifestations

Typically, the presentation of Lyme disease is divided into three stages. Stage I of the disease, which generally lasts for several weeks, may include fever, chills, headache, fatigue, stiff neck, backache, sore throat, nausea, lack of appetite, muscle and joint pains, difficulty sleeping, difficulty concentrating, malar rash, and enlarged lymph glands; or, in other cases, this stage of the disease may be completely asymptomatic.[1-4,7-9] It is also during stage I that the most characteristic sign of Lyme disease often appears, namely a slowly expanding red rash known as erythema chronicum migrans (ECM), or simply erythema migrans (EM).[7] Whether or not symptoms occur during stage I of Lyme disease, a patient may be immune and experience no further problems, or may progress to stage II and/or stage III of the disease.[4,9,10] It is highly desirable to diagnose Lyme disease early in the course of illness, since treatment is most effective during stage I and least effective in the chronic forms of stage III.[3]

ECM occurs in about 70% of adults and 50% of children with Lyme disease.[3] This lesion may initially appear as a small papule or break in the skin typical of an insect bite, but sometimes no papule is visible.[7,8,11] During the first few days, redness expands outwardly from the center to a plaque which is 3 to 68 cm in diameter (mean, 15 cm).[4,8] Central fading often occurs thereafter, giving the lesion a "target" appearance.[7,8] If untreated, lesions usually fade away in four to six weeks, but may last anywhere from one day to 14 months.[4,9] Lesions disappear in several days with successful antibiotic treatment.[4]

On the average, ECM lesions appear eight to nine days after a tick bite, but that may vary from 2 to 32 days.[2,7] Lesions may vary in size, location, color intensity, number, recurrence, and duration, and in stage II of Lyme disease, ECM lesions may occur at sites other than the original bite, in which case they are generally smaller and rarely number more than ten.[4,8,9] These lesions rarely cause pain, are generally warm to touch, sometimes cause a little itching and/or burning, and in some instances

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develop a raised border and/or a vesiculated or necrotic center.[1,4,7,9,11] If a patient has ECM after a tick bite, then that patient should be treated with antibiotics even in the absence of any other symptoms.[7] When ECM persists or recurs, it suggests that antibiotic treatment has been inadequate, and re-treatment is indicated.[9]

Stage II of Lyme disease may show up weeks to months after a tick bite, and symptoms include such things as neurologic, heart, eye, and generalized inflammatory problems, with rare deaths.[1-3,7,8] Neurologically, about 37% of patients have meningitis, cranial nerve disease, or radicular nerve disease, or any combination of the three.[3] Bell's palsy develops in 10% of patients, and other possible neurologic manifestations include hearing impairment, vertigo, severe headache, and encephalitis.[9,10] The most common heart condition with Lyme disease is atrioventricular block, which rarely lasts more than a week, and associated symptoms may include palpitations, light-headedness, and shortness of breath.[2,4,8-10] Conjunctivitis is the most common eye disease in stage II, with iritis and necrotizing retinitis or other serious eye problems occurring more rarely.[3,7] Also, rarely, such things as hepatitis, myositis, osteomyelitis, panniculitis, hematuria, proteinuria, swollen lymph nodes, enlarged spleen, orchitis, and respiratory distress syndrome may occur.[4]

Stage III of Lyme disease may be manifested months to years after the tick bite, and its manifestations can include arthritis, skin problems, neurologic problems, fatigue, and psychiatric problems.[2-4,7,9] About 60% of untreated patients will experience intermittent bouts of arthritis in one or more joints; it may move from joint to joint, primarily affecting large joints, especially the knee; the temporomandibular joint, however, is the fourth most common joint involved.[2,7-9] Arthritic attacks are usually brief, and may occur off and on for three to seven years, either as a one-time episode, or in a small number of patients as continuous, prolonged joint disease.[2-4,7-9] Skin problems in this stage may include acrodermatitis chronica atrophicans, lymphadenosis benigna cutis (lymphocytoma), granuloma annulare, erythema nodosum, urticaria, Henoch-Schonlein-like purpura, and possibly morphea.[3,4,7,9] Neurologic and/or psychiatric problems in stage III can include such things as headache, sleep disturbance, depression, irritability, sensorineural hearing loss, language disturbances, intermittent burning or numbness in the limbs, problems with short-term memory, mental illness, and permanent paralysis. One clue that neurologic problems are coming from Lyme disease is profound fatigue, which is not typically a feature of other causes of brain disease.[2-4,9] Diseases that may be confused with stage III of Lyme disease include amyotrophic lateral sclerosis, localized scleroderma, morphea, lichen planus atrophicus, multiple sclerosis, organic brain syndrome, depressive and psychological disorders, myositis or myalgia, chronic fatigue syndrome, chronic rheumatoid arthritis, juvenile rheumatoid arthritis, and Alzheimer's disease.[3,9]

Diagnosis

Diagnosing Lyme disease early, as with ECM, may result in treatment that precludes the possibility of obtaining confirming laboratory studies, and properly so. Nonetheless, a blood test for antibodies against *Borrelia burgdorferi* is generally useful about six weeks after the onset of symptoms, with IgM antibodies peaking between the third and eighth weeks of illness, and IgG antibodies appearing at about two months and peaking at about 12 months.[2,3,6,7,10] If antibody testing is negative when Lyme disease is strongly suspected, then testing should be repeated in two to four weeks; persons with weak, sluggish immune systems may have false-negative tests for longer periods than healthier individuals.[7,8] False-positive tests for Lyme disease may occur in syphilis (FTA-ABS, but not VDRL) and relapsing fever, and cross reactivity may occur with oral spirochetes, mononucleosis, rheumatoid arthritis, Rocky Mountain spotted fever, echovirus infection, and varicella infection, but further blood testing can often discriminate between these illnesses.[3,4,7,9,12] With primarily neurologic problems, it may be helpful to test for antibodies in the cerebrospinal fluid, which may be even higher than in the blood. In the future, blood and urine tests may be developed based on antigen rather than antibody detection, providing earlier and more sensitive diagnosis.[3,7-9] Patients with positive antibody testing for Lyme disease may remain permanently positive at low levels even after successful treatment or spontaneous resolution.[9]

Treatment

Treatment of stage I Lyme disease should be initiated as early as possible with an oral agent such as doxycycline, amoxicillin, or erythromycin for three to four weeks, though some believe that all stages of the disease should be treated for 30 days.[2,8,9] Of the three, doxycycline is the drug of choice in nonpregnant persons over 8 years of age, with amoxicillin following as the second choice in persons not allergic to penicillin.[3,7] Evidence is accumulating that Lyme disease can cross the placental barrier with the risk of in-utero or neonatal death, and it may be prudent to use parenteral therapy during the first trimester when the fetus is at greatest vulnerability, since oral penicillin at the recommended dosage does not appear adequate to provide in-utero protection; furthermore, parenteral therapy is indicated if a pregnant woman has any manifestation of Lyme disease beyond ECM.[1,3,6-8] Parenteral therapy, such as intravenous ceftriaxone (Rocephin) or penicillin G for at least two weeks, is also indicated for neurologic problems other than isolated facial nerve paralysis, carditis (other than the mildest forms), chronic arthritis, and posterior eye involvement.[4,7,8,10] Minocycline (Minocin) penetrates the central nervous system better than penicillin or ceftriaxone and is much more active than conventional tetracycline, so minocycline may prove beneficial in CNS Lyme disease; also, pulsed high-dose intravenous cefotaxime (Claforan) may be helpful in stubborn neurologic infections.[4,9]

Other oral antibiotics that may be useful in Lyme disease include azithromycin (Zithromax), cefadroxil (Duricef), cefixime (Suprax), and cefuroxime (Ceftin).[3,9,10] Suggested treatment regimens for early Lyme disease include: tetracycline, 250 mg orally four times a day for 10 to 30 days; doxycycline, 100 mg orally two times a day for 10 to 30 days; amoxicillin, 500 mg orally four times a day for 10 to 30 days; cefuroxime, 500 mg orally two times a day for 10 to 30 days; erythromycin, 250 mg orally three times a day for 10 to 30 days, though it should be noted that treatment failures have occurred with all of these regimens, and retreatment may be necessary.[4,10] In addition, antibiotics may sometimes have to be continued at a lower level for several months after initial therapy to prevent a relapse.[3] Skin problems such as acrodermatitis, and/or arthritis in later Lyme disease, may respond to oral antibiotics used for 30 days.[4,7,10]

Prophylaxis

Prophylaxis with antibiotics for those entering wooded areas is not generally recommended due to comparison of risks vs. benefits.[4,7,8,10] A vaccine is available to protect animals from Lyme disease, and such a vaccine will likely be available for humans in the near future.[1,13]

Lyme disease is most commonly contracted from nymphal ticks, which are active in the summer and are about the size of the head of a pin.[1,3] It appears very unlikely that an individual will acquire Lyme disease unless an adult or nymphal tick is attached for at least 24 hours, which makes regular bodily examinations and rapid removal of ticks a priority.[5,14] Ticks should be removed by wiping the area with alcohol, flipping their bodies over onto their backs, grabbing their mouth parts from the side with small tweezers, and pulling steadily until extraction occurs.[1,2,5,14] Squeezing the actual body of the tick, as well as the old-fashioned methods of burning, drowning, or otherwise annoying the tick, should be avoided.[2,5] The best tick repellents are probably permethrin-containing preparations such as Permanone and Duranon, which may be applied to clothing, followed by DEET, which may be applied cautiously to skin but may be toxic if overly applied.[4,5,15] ❑

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TENNESSEE MEDICAL ASSOCIATION
160TH ANNUAL MEETING
April 6-9, 1995
Stouffer Nashville Hotel/Nashville Convention Center

Airway Compromise in a Patient With Parkinson's Disease

B. JEFF SANDERS, M.D. and W. BRUCE THOMSEN, M.D.

Introduction

We present the case of a patient with Parkinson's disease and associated intermittent stridor treated with tracheostomy. This case serves as an example of airway pathology associated with basal ganglia disease. The anesthesiologist is regarded as the expert in airway management, and we believe a keen awareness of the relationship of Parkinson's disease with laryngeal spasm and upper airway obstruction is vital to administration of anesthesia or sedation to patients with this extrapyramidal disorder.

Case Report

An 80-year-old man presented himself to the neurology clinic for routine follow-up of his longstanding Parkinson's disease. Because he had tachypnea with inspiratory stridor, he was referred to the emergency department for further evaluation. History revealed similar stridor daily for approximately four months, primarily in the late afternoon and evening. These episodes subsided spontaneously, and the patient rested comfortably at night without noisy or labored breathing. There was no history of recent cough or fever. In addition to Parkinson's disease, the patient had had Gullian-Barre syndrome ten years earlier, when prolonged intubation necessitated surgical tracheostomy. Medication included carbidopa 25 mg/levodopa 100 mg (Sinemet 25-100) by mouth every four hours.

Physical examination showed an elderly black man in moderate respiratory distress and mildly diaphoretic, with inspiratory and expiratory stridor. His temperature was 99.4°F orally, heart rate 84/min, and respiratory rate 40/min. A well-healed tracheostomy scar was present in the neck. The chest showed mild retractions through use of the accessory muscles, and coarse upper airway sounds were heard on auscultation. There was no respiratory muscle weakness. The cranial nerves were intact, and there was cogwheel rigidity and a significant resting tremor in both upper extremities.

Laboratory values: The white blood cell (WBC) count, hematocrit, electrolytes, and calcium level were all within normal limits. Arterial blood gas analysis while he was breathing oxygen at 2 liters/min via nasal cannula showed pH 7.42, $\mathrm{Pco_2}$ 44 mm Hg, $\mathrm{Po_2}$ 87 mm Hg, and hemoglobin saturation 97%. Radiographs of the chest and soft tissues of the neck were normal or consistent with age.

Fiberoptic laryngoscopy was performed by an otolaryngologist. The true vocal cords and glottic structures were seen to alternately adduct and abduct with intermittent spasm, and there was mild supraglottic edema. The fiberoptic laryngoscope could not be passed below the level of the vocal cords.

The anesthesiology service, consulted regarding management of the airway, administered intravenous lidocaine without relief of stridor. One option of management was oral endotracheal intubation with standby emergency tracheostomy for presumed tracheal stenosis, but based on his history of intermittent stridor, along with normal arterial blood gases, a trial of close observation in the surgical intensive care unit was chosen.

The safest approach to the airway was thought to be tracheostomy under local anesthesia while awake, followed by rigid bronchoscopy to demonstrate any significant narrowing of the trachea. The next morning, the patient was taken to the operating room where the tracheostomy was performed uneventfully. Rigid bronchoscopy revealed no stenosis, and after another day of observation in the intensive care unit, the patient was transferred to the ward, where he did well. Without further evidence of stridor or tachypnea, he was discharged home one week later.

Discussion

Parkinson's disease is a degenerative process of the central nervous system affecting approximately 2.5% of persons over age 65. The primary pathophysiologic disturbance is the depletion of dopaminergic fibers from the basal ganglia. Dopamine is a neurotransmitter that inhibits the rate of firing of neurons that control the extrapyramidal motor system. As a result of dopamine depletion in Parkinson's disease, there is a loss of inhibition of the extrapyramidal motor system along with unopposed action of acetylcholine.

The classic signs and symptoms of Parkinson's disease are a shuffling gait, facial immobility, rigidity of the extremities, and a rhythmic tremor that is prominent at rest but disappears briefly with intentional movement. Though a chronic disease, the symptoms are often present in an "on-off" fashion, with marked fluctuation of symptoms throughout the day. Treatment of the disease is generally directed at increasing dopamine concentrations in the basal ganglia. Because dopamine does not cross the blood-brain barrier, its immediate precursor, levodopa, is the drug of choice. After levodopa crosses the blood-brain barrier, it is acted upon by a decarboxylase enzyme and converted to dopamine, thereby increasing the central nervous system concentration of the neurotransmitter. Carbidopa, a decarboxylase inhibitor that does not cross the blood-brain barrier, is given in combination with levodopa to prevent decarboxylation of dopamine peripherally, thus allowing a smaller dose of levodopa and fewer side effects.[1]

From the Department of Anesthesiology, University of Tennessee Medical Center, and the Veteran's Administration Medical Center, Memphis.

Reprint requests to Department of Anesthesiology, University of Tennessee College of Medicine, 800 Madison Ave., Memphis, TN 38163 (Dr. Sanders).

Respiratory abnormalities in patients with Parkinson's disease are well-documented, both restrictive and obstructive defects having been observed.[2-4] Specifically, stridor in association with Parkinsonism has been described in multiple accounts. In 1965 Vas et al,[5] in a report of two patients with stridor secondary to laryngeal spasm and Parkinsonism, first postulated laryngeal spasm to be due to basal ganglia disease. Ilson et al,[2] in 1983 reported a series of 25 consecutive patients, of whom 56% had dyspnea and a restrictive ventilatory defect, both of which responded to treatment with levodopa. Stridor responsive to levodopa therapy has also been noted in association with normal vocal cord function by Corbin and Williams[6] in their accounts of two patients in which stridor was due to dystonia of pharyngeal, jaw, and neck muscles. Vocal cord palsy without spasm has been described in one patient whose stridor and hoarseness improved with levodopa.[7] Postextubation laryngospasm has been seen by Backus et al[8] in an unanesthetized Parkinson's patient who had required brief endotracheal intubation for respiratory arrest presumed secondary to drug interaction.

Involvement of the upper airway musculature in Parkinson's disease was also reported by Vincken et al[9] in a series of 27 patients, 37% of whom had evidence of upper airway obstruction with inflow limitation on flow-volume analysis. Of these, 30% required emergency endotracheal intubation for worsening stridor and obstruction brought on by a stressful situation.

An almost universal finding in the patients described above was the fluctuation of respiratory symptoms coinciding with the fluctuation of tremor. The response of respiratory symptomatology to levodopa seems to verify the association of laryngeal spasm with Parkinson's disease, and indeed, electromyographic abnormalities of laryngeal musculature are present in extrapyramidal disorders.[10]

Our patient presented a difficult case of airway management. Fiberoptic examination of the larynx revealed regular, rhythmic adduction and abduction of the vocal cords, as well as a spastic component of movement of cords and supraglottic structures, leading to inflow obstruction. These endoscopic findings are consistent with those found in patients exhibiting a Type A (respiratory flutter) flow-volume loop, as described by Vincken et al.[9] The history of tracheostomy for Guillain-Barre syndrome did not allow us to exclude some element of subglottic stenosis as the cause of stridor. Although the possibility of medically treatable levodopa-sensitive stridor was entertained, tracheostomy was ultimately chosen, as the patient had previously failed therapy with increased levodopa secondary to severe dyskinesias.

Management of anesthesia for patients with Parkinson's disease must generally be based on a knowledge of the disease process and the side effects of drug therapy.[11] Such patients are prone to having hypotensive episodes and dysrhythmias. An increased incidence of nausea and vomiting, along with pharyngeal muscle weakness, make these patients especially susceptible to aspiration. Another prominent feature of the disease is the enhancement of salivation brought on by relatively increased amounts of acetylcholine. This can cause vocal cord stimulation or make visualization of the airway difficult during direct laryngoscopy. These are all well-known characteristics to be considered when providing anesthesia for persons with Parkinsonism. Little is noted, however, about the inclination of laryngeal spasm and airway obstruction to occur in these patients.

Our review of the literature revealed that the laryngeal muscle and vocal cord abnormalities that our patient had are not as uncommon as first thought. Over 10% of patients in one series required emergency intubation for respiratory distress during a stressful situation in which tremor was accentuated.[9] Surgical procedures under local or regional anesthesia in an awake patient can provide emotional stress sufficient to cause acute exacerbation of extrapyramidal symptoms, along with the danger of laryngeal dysfunction and respiratory distress necessitating intubation. We believe patients with Parkinson's disease, particularly those with preexisting respiratory dysfunction, are at increased risk for airway compromise when undergoing anesthesia.

As the segment of the population over age 65 continues to grow, more patients with Parkinson's disease will enter operating rooms for both minor and major surgical procedures. It is important that anesthesiologists caring for these patients be cognizant of and prepared for this potentially disastrous airway complication. ❑

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Differentiation of Tubo-Ovarian Abscess From Pelvic Inflammatory Disease, and Recent Trends in the Management of Tubo-Ovarian Abscess

JAYANTH H. KESHAVA MURTHY, M.D. and SHOBHA R. HIREMAGALUR, M.D.

Introduction

Tubo-ovarian abscess (TOA) is a common problem plaguing women of reproductive age, and plays havoc with fertility. A good history and physical examination complemented with sonographic assessment aids early diagnosis. Management is aimed at conserving fertility in most cases, and in recent times good antibiotic regimens have reduced the surgical indications. TOA is one of the most important differential diagnoses of lower abdominal pain in women of reproductive age.

Case Report

A 15-year-old girl entered the emergency room complaining of lower abdominal pain for the past two days. There were no aggravating or relieving factors for the abdominal pain, which was dull, aching, and continuous. There was no nausea, vomiting, or dysuria, but she had a mucoid vaginal discharge. She was sexually active, her last intercourse being two days prior to the onset of abdominal pain. She attained menarche at 12 years of age. Her obstetric history was G_0 P_0 A_0 L_0. Her menstrual cycles were 4-5/28 and regular, with mild dysmenorrhea; the last menstrual period was two days prior to her presentation in the emergency room. She did not use birth control pills, but did use condoms at times.

Physical examination revealed temperature of 101°F, pulse 80/min, blood pressure 110/80 mm Hg, and respiratory rate 18/min. She was developmentally Tanner IV. Her abdomen was soft without guarding, but rebound tenderness was present in both lower quadrants. There was no organomegaly, and bowel sounds were normal. Pelvic examination showed blood in the vagina. Her external genitalia were normal, the cervix being nulliparous, without lesions, though it was tender on motion. Her uterus was retroverted, mobile, and not enlarged, and the adnexa were unremarkable.

Laboratory data on admission showed a WBC count of 15,300/cu mm, with 12% band forms. The erythrocyte sedimentation rate (ESR) was 44 mm/hr, B-HCG was negative, amylase was 4 U/L, and C-reactive protein was positive. Urinalysis showed 10 to 25 WBC/HPF and traces of protein but no glucose, ketones, or blood. VDRL was negative, but *Chlamydia* chemiluminescence test was positive. There was no growth on urine and blood cultures. A sonogram of the abdomen showed a 3.65-cm homogenous cystic mass in the right adnexal region consistent with TOA (Fig. 1). The patient received cefoxitin 2 gm IV every six hours for two weeks, doxycycline IV 100 mg every 12 hours for two weeks, and at discharge was prescribed oral doxycycline 100 mg twice a day for two more weeks. She responded symptomatically in two days, and her laboratory findings at discharge were WBC count 9,100/cu mm, without band forms. C-reactive protein was negative, and urinalysis showed fewer than 5 WBC/HPF.

Discussion

TOA is one of the most common causes of pelvic masses in women of reproductive age, and is the most common intra-abdominal abscess in premenopausal women, accounting for about 100,000 yearly admissions to the hospital. Though TOA occurs in up to one-third of women hospitalized with

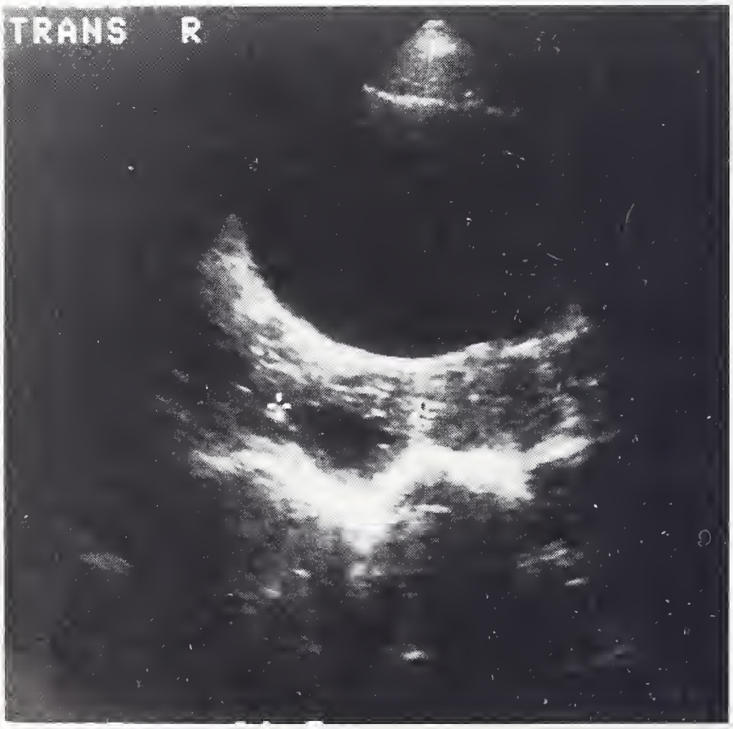

Figure 1. Sonogram of the abdomen shows a 3.65-cm homogenous cystic mass in the right adnexal region.

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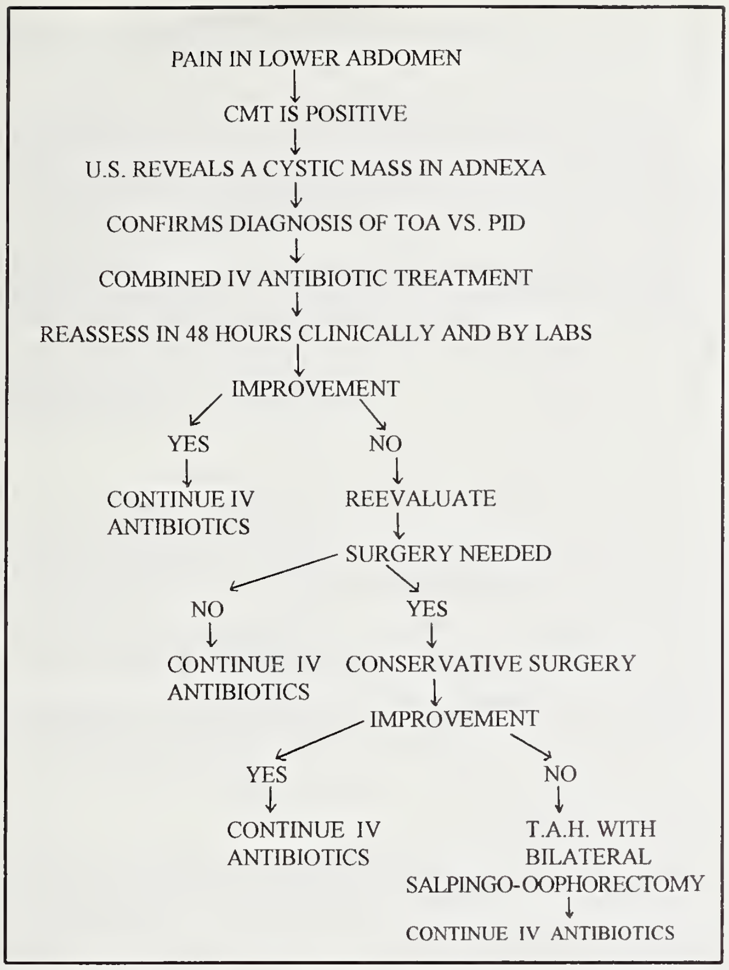

Figure 2. Flow chart showing management of a patient with TOA. CMT = cervical motion tenderness; U.S. = ultrasound; TOA = tubo-ovarian abscess; PID = pelvic inflammatory disease; IV = intravenous; TAH = total abdominal hysterectomy.

salpingitis, only 22% to 50% of all cases of TOA are associated with pelvic inflammatory disease (PID).[1] Risk factors for TOA are similar to those for PID, which include multiple sexual partners, prior history of PID, no contraceptive use, intrauterine device (IUD) use, and low socioeconomic status.[2]

Etiology. Typically, TOAs are polymicrobial, featuring a mixture of anaerobic, aerobic, and facultative organisms. The most frequently isolated organisms include *E. coli, B. fragilis,* other bacteroids, peptostreptococci, and peptococci. It is of interest to note that although *N. gonorrhoeae* and *C. trachomatis* are considered major pathogens of PID, they are rarely cultured from abscess cavities. *Actinomyces israelii*, a gram-positive anaerobe, is an important pathogen causing TOA in long-term IUD users.[3]

Diagnosis. Patients with TOA typically give a history of abdominal or pelvic pain, which may or may not include fever (>38.5°C) and chills. A previous history of PID can be obtained in only 46% of patients. Examination may reveal lower abdominal tenderness, often with “peritoneal signs” such as guarding and rebound tenderness. Adequate bimanual palpation of pelvic organs often is difficult due to extreme tenderness of the entire pelvic cavity. Thus it is difficult to distinguish PID from TOA by physical examination.

There are no specific laboratory findings. The mean admission leukocyte count is 15,000/cu mm, mean ESR is 64.3 mm/hr, and mean C-RP is 20.3 mg/dl. Laboratory data are not specific.

An ultrasound examination is a must for differentiating TOA from PID. A typical TOA appears as a complex cystic adnexal or cul-de-sac mass with thick irregular walls, and septations most often contain internal debris and echoes. The abdominal sonogram in PID does not show a cystic mass, which is the most important differentiating factor. Ultrasound has a sensitivity of 93% and a specificity of 98.6% in the detection of pelvic abscesses. Computed tomography (CT), though not needed, may be helpful when the diagnosis is not clear. Typical findings on CT in TOA are an adnexal thick walled cystic mass with complete or partial septation and indistinct borders. There may be anterior displacement of the mesosalpinx confirming the adnexal origin. Occasionally bilateral or unilateral hydronephrosis with hydroureter are seen.[4]

Gallium-GT and Indium-111 labelled leukocyte scans are used less frequently, as they are costly and require up to two days before interpretation of tests. Moreover, they highlight any inflammatory processes, and thus cannot distinguish TOA from diverticular abscess and infected hematomas. Experience with MRI in TOA is extremely limited.

Medical Management. The management of TOAs has changed dramatically during the past few years with the advent of potent antibiotics. Most women with TOAs are in their reproductive years, therefore the usual and accepted approach is conservative, either medical, surgical, or a combination of the two, in an attempt to preserve fertility as much as possible (Fig. 2).

In 1993, the CDC recommended an antibiotic regimen for the management of acute PID (Table 1).[5] The clinical response rate to these antimicrobial regimens is more than 70%. Because the microbiologic findings in PID and TOA are similar, the CDC-recommended guidelines have been applied to the treatment of TOAs as well, with the modification that antibiotics be continued intravenously for at least seven days.

Surgical Management. Intra-abdominal rupture of the TOA is a surgical emergency. When there is a high index of suspicion of other surgical emergencies such as appendicitis, surgical treatment is recommended. In addition, if the patient fails to respond to appropriate antibiotic therapy within 48 to

TABLE 1

CDC RECOMMENDATIONS FOR INPATIENT THERAPY OF PID

Regimen A*
    Cefoxitin, 2 gm IV, four times a day
        OR
    Cefotetan, 2 gm IV, twice a day
        PLUS
    Doxycycline, 100 mg IV or orally, twice a day

Regimen B†
    Clindamycin, 900 mg IV, three times a day
        PLUS
    Gentamicin loading dose IV or IM
    (2 mg/kg of body weight) followed by
    a maintenance dose (1.5 mg/kg) three times a day

* Continue for at least 48 hours after clinical improvement, after which doxycycline, 100 mg orally, twice a day, should be continued for a total of 14 days.

† Continue for at least 48 hours after clinical improvement, then follow with doxycycline, 100 mg orally, twice a day or clindamycin, 450 mg orally, four times a day, to complete a total of 14 days of therapy. When TOA is present, many physicians use clindamycin rather than doxycycline for continued therapy because it provides more effective anaerobic coverage.

Adapted from *MMWR*.[5]

72 hours, surgical intervention is advised. An exploratory laparotomy is mandatory in all postmenopausal women with TOAs because of the high risk of associated malignancy. Approximately 25% of patients treated for TOAs require surgery. The size of the TOA may influence the decision for or timing of the operation. In one study, 60% of patients with TOAs measuring 10 cm or more required surgery, whereas less than 35% of those with TOAs measuring 7 to 9 cm and less than 20% of those measuring 4 to 6 cm did.[6] Surgical therapy is usually conservative, with unilateral adnexectomy or laparoscopic drainage. Studies show that 50% of surgical patients require only conservative treatment. Reich et al[7] treated 21 women with TOAs with intravenous antibiotics and laparoscopic drainage; 20 of the 21 had complete resolution. One had a total abdominal hysterectomy and bilateral salpingo-oophorectomy. Six of the 20 subsequently achieved pregnancy. There were no laparoscopic injuries.

Worthen and Gunning[8] reported on 33 patients who had CT-guided percutaneous drainage of TOAs after 24 hours of intravenous antibiotic therapy. The overall success rate was 77%. Complications occurred in two patients, one of whom had a bowel laceration and the other a rupture of TOA. Tyrell et al[9] had no complications in their series of eight patients.

Although these studies of laparoscopic and percutaneous drainage are encouraging, there are still no randomized controlled studies comparing antibiotic treatment alone with antibiotics in combination with a drainage procedure. Moreover, these studies have not addressed the issues of long-term outcome, such as the preservation of fertility. The important question about fertility is not answered because we do not ask the women whether or not they wish to become pregnant.

Conservative antimicrobial therapy is recommended as an initial approach in the management of a suspected TOA. ☐

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Blunt Carotid Artery Injury

JEFF LAWHON, M.D.; LEWIS SOMBERG, M.D.; and DANIEL FISHER, M.D.

Introduction

Blunt carotid artery injury is a rare event with a reported incidence of 1 per 1,000 blunt injuries.[1] The initial symptoms may be masked by an overlying primary neurologic injury. Asymptomatic injuries may not be detected or may be detected later. The morbidity and mortality of this injury remains significant, and a high index of suspicion must be maintained in patients with blunt head, face, and neck trauma. The first sign of injury may be neurologic symptoms beginning months after the initial trauma. This paper presents the case report of a patient who had an initially asymptomatic carotid artery injury with an eight-month delay in symptoms.

Case Report

A 35-year-old unrestrained male front seat passenger was found conscious and combative at the scene of a two-car head-on motor vehicle crash. There was evidence of windshield damage from head impact. After a 10- to 12-minute extraction he was transported by air to our regional level I Trauma Center. During transport his level of consciousness deteriorated, and he no longer responded to pain. He was endotracheally intubated en route, and arrived in the trauma resuscitation room minimally responsive, with purposeful movement of all extremities and pupils that were 3 mm, equal, reactive, and fixed in a leftward gaze. Notable injuries included a small left temporal laceration, a palpable left clavicular fracture, and a contusion of the anterior superior chest wall. CT of the brain without contrast demonstrated multiple small intracerebral hemorrhages in the left parietal and right temporoparietal regions (Fig. 1) consistent with his neurologic findings. He was admitted to the intensive care unit (ICU) and treated for his closed-head injury with head elevation, hyperventilation, and mannitol. His ICU course was complicated by a left lower lobe pneumonia requiring prolonged endotracheal intubation for pulmonary toilet. He became more responsive by hospital day 5 and was extubated on hospital day 9. The remainder of his hospital course was unremarkable except for mild confusion, and he was discharged on hospital day 14. On follow-up two weeks later he was alert and no longer confused, complaining only of pain in his left shoulder and lower back, for which an orthopedic evaluation was scheduled.

Eight months later he returned for evaluation of right hemisphere headaches that had been gradually increasing in frequency over the past two months, and three episodes of left-sided weakness with slurred speech. He was hospitalized, and a head CT scan showed no abnormality, with resolution of the hemorrhagic areas previously noted. A four-vessel cerebral angiogram demonstrated a right internal carotid artery dissection, with a pseudoaneurysm at the level of C1-C2 (Fig. 2). Although the lesion was quite high, it was accessible for repair by resection and reverse saphenous vein interposition grafting after unilateral mandibular subluxation by the Ivy loop method.[2] Following surgery, he recovered rapidly without neurologic deficit, and was discharged the third postoperative day on 325 mg of aspirin per day. Follow-up at one and five weeks has been unremarkable, no further symptoms being noted.

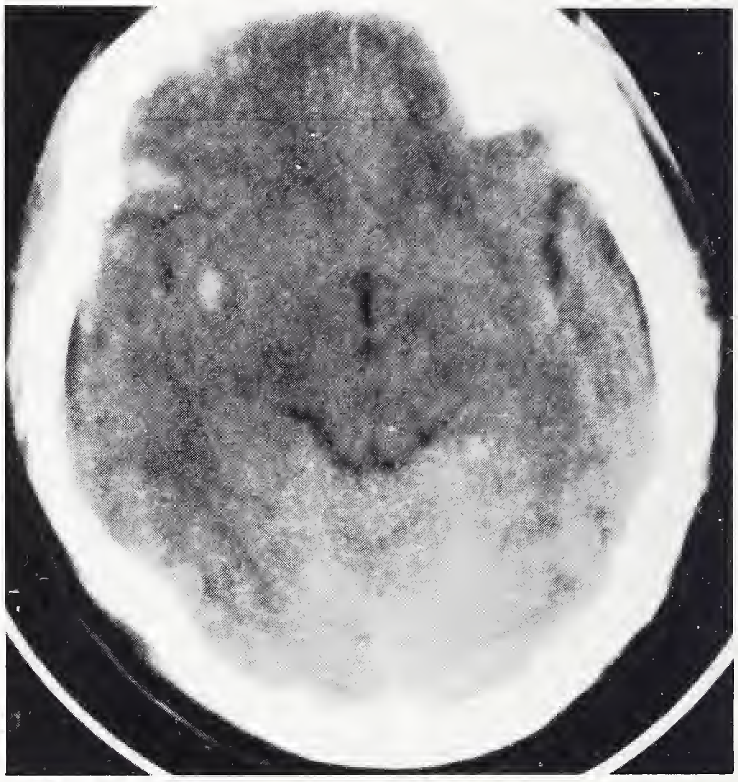

Figure 1. Multiple areas of left parietal and right temporoparietal hemorrhage.

Discussion

The detected incidence of blunt carotid artery injury of 0.08% was calculated by Davis et al[1] through a recent review of the literature. The true incidence is unknown, as many asymptomatic injuries and injuries in blunt trauma deaths go undiagnosed. Because of masked or absent symptoms only 6% of blunt carotid artery injuries are accurately diagnosed initially.[3] The consequences of delayed or missed diagnosis

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From the Department of Surgery, University of Tennessee, Chattanooga Unit.

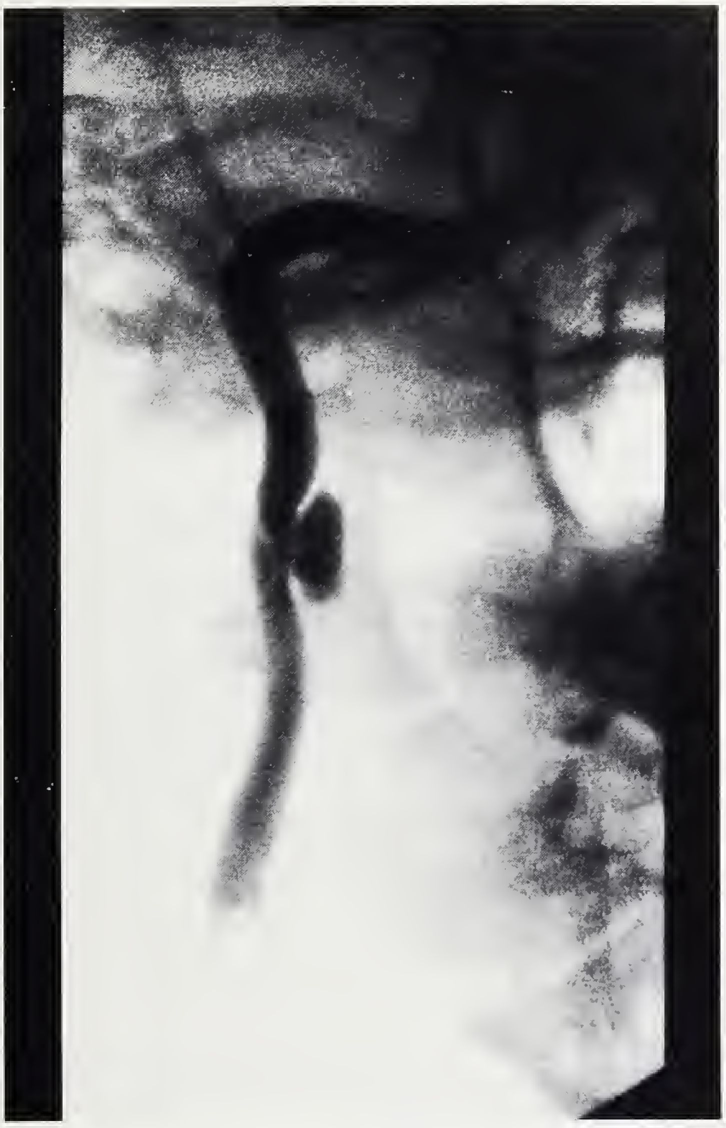

Figure 2. Arteriogram showing right internal carotid artery dissection and pseudoaneurysm.

may be catastrophic, resulting in a quoted mortality of 12% to 46%.[3,4]

A high index of suspicion can lead to earlier diagnosis and treatment, with improved outcome. Although 50% of carotid artery injuries have no direct sign of trauma, a number of associations have been made.[3] Carotid artery injury is frequently associated with intraoral trauma, basilar skull fracture, shoulder strap trauma to the neck, mandible fracture, strangulation, and blows to the head, face, neck, and sternum.[1,3,4-6] Arterial injury results from direct crushing of the artery or from hyperextension causing intimal or transmural tears. The physical signs of injury include an expanding hematoma, audible bruit, pulsatile neck mass, palpable thrill, Horner's syndrome, or profuse oropharyngeal bleeding.[3,5] Other findings suggestive of carotid artery trauma are limb paresis without head injury, a lucid interval prior to the onset of neurologic symptoms, and transient ischemic attacks.[3] Even with a high index of suspicion, diagnosis will still be missed or delayed.

The spectrum and occurrence of carotid artery injury in blunt trauma was updated in a recent multicenter study by Cogbill et al[7] and noted as thrombosis (35%), dissection (32%), transection (12%), pseudoaneurysm formation with and without dissection (18%), and carotid-cavernous fistula formation (5%). The sites of injury included the common carotid artery proximal to the bifurcation (7%), common carotid artery at the bifurcation (49%), internal carotid artery (38%), and the internal carotid artery at the skull base (6%).[3] Presenting signs and symptoms can vary depending on the type and site of injury. Forty-five percent of patients with thrombosis had a normal neurologic examination on admission, but neurologic symptoms were delayed in 95%.[7] Patients with carotid artery dissection, the most frequently identified injury, had an abnormal neurologic examination in 45%, and another 15% develop delayed neurologic impairment.[7] Eighty percent of patients with carotid artery transection manifested dense neurologic signs on admission, and almost all died from exsanguination or massive cerebral infarction.[7] Pseudoaneurysm with or without dissection is probably the most frequently missed injury to the carotid artery. Though 70% of patients with a pseudoaneurysm initially had no neurologic symptoms, as many as 40% showed them days to months later, as in our case.[7] Carotid-cavernous fistulas are rare and their detection is almost always delayed as a cause of cranial nerve palsies and eye findings.[5]

Diagnostic methods to detect and evaluate carotid artery injury are diverse. Doppler ultrasound has been reported to be an invaluable screening tool, with an accuracy of 86%, but its use is limited when the injury is situated high above the carotid artery bifurcation or intracranially.[7] CT scan is useful in the diagnosis of carotid-cavernous fistula, but has little value elsewhere.[5,6] MRI angiography has been used in the pediatric patient, as it is less invasive than standard arterial angiography.[8] Angiography of the aortic arch, brachiocephalic vessels, and both extracranial and intracranial carotid and vertebral arteries is the diagnostic standard.[7,8] Definition of the injury by angiography provides information useful in determining operative vs. nonoperative management.

Management options include observation, systemic anticoagulation, and/or surgical repair. Although controversial, thrombosis may be managed by thrombectomy and intimal repair or grafting in patients without neurologic symptoms or within two to four hours of the onset of neurologic symptoms.[4,7,9] To prevent embolism, thrombosis may also be treated by systemic anticoagulation or carotid artery ligation in patients who are asymptomatic.[4,7] Nonocclusive arterial dissection is preferentially managed with systemic anticoagulation, reserving resection and grafting for injuries to the common carotid or very proximal portion of the internal carotid artery.[4,7] Carotid arterial transection from blunt trauma is usually fatal or associated with such profound neurologic abnormalities as to limit its treatment to supportive care.[7] Pseudoaneurysm formation is of particular interest to the surgeon, as most are amenable to repair by excision and grafting, with good outcome.[7] Finally, carotid-cavernous fistulas have been successfully treated by balloon embolization, with improvement of cranial nerve palsies and reversal of eye symptoms in most cases.[5] While these are the most common methods of management, an individualized approach to treatment should be used, as there may be other injuries in these patients that require modification of the treatment plan.

Conclusion

Carotid artery injury by blunt trauma is often not initially apparent, but should be suspected in patients with blunt head, face, and neck trauma. In order to detect neurologic signs and symptoms leading to the diagnosis of carotid artery injury, close initial observation with frequent neurologic examination is essential. The limitations of Doppler ultrasound have yet to be defined in its role as a screening tool for blunt carotid injury. When a patient develops new neurologic symptoms or has unexplained neurologic symptoms, an arteriogram should be performed when a repeat CT brain scan fails to identify a cause. Although many carotid artery injuries will not be diagnosed, because of the nature of the injury a high index of suspicion must be maintained, as the outcome of these injuries can be improved with early diagnosis and treatment. ❑

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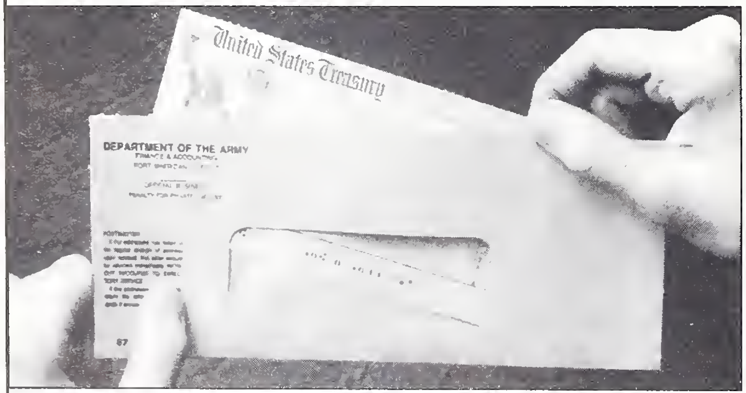

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Vanderbilt Morning Report

Polymicrobial Myositis

Case Report

A 46-year-old woman presented herself complaining of fever and a painful, swollen, reddened right thigh. She had been well until two weeks earlier, when she fell against a table leg, with a resulting abrasion to the right thigh. Over the next two days, erythema, edema, and pain developed in this area. She was examined at the local emergency room and was admitted, by her report, for a "serious skin infection." She received intravenous cephalosporin for five days, followed upon discharge with oral quinolone for ten more days. At discharge, the pain, redness, swelling, and fever had resolved. Six days later, her symptoms recurred, and she presented herself to the emergency department at Vanderbilt University Medical Center.

In the past she had had a hysterectomy for fibroid tumors and abdominal/pelvic pain, and an appendectomy in the distant past. She had mild hypertension, for which her only medications were a combination diuretic/ACE inhibitor and the oral quinolone. She reported allergies to codeine, hydrocodone, and sulfa drugs. She denied use of alcohol, tobacco, or illicit substances. Review of systems was unremarkable; she specifically denied any change in appetite, weight loss, change in bowel habits, or abdominal pain. Family history was notable only for senile coronary artery disease. The patient was married, had two children, and lived in rural Tennessee. She was the primary caretaker for her husband, who suffered from multiple chronic medical problems and was receiving total parenteral nutrition at home. He was presently an inpatient at Veterans Administration Hospital.

On examination she was a pleasant woman in no acute distress. Her temperature was 101.4°F and blood pressure 148/98 mm Hg. An area of erythema and tenderness measuring 6 × 5 cm was present on the right thigh. There was no evidence of superficial trauma, but on palpation there was a sensation of deep fluctuance, and moderately enlarged, tender right inguinal nodes were present. The remainder of the examination was normal.

Admission laboratory studies revealed leukocytosis 16,300/cu mm with 5% bands and 80% segmented neutrophils. Chest film and electrocardiogram were normal. A CT scan of the right thigh revealed gas in the quadriceps muscles, for which open drainage and debridement were performed. Biopsy revealed abundant fat necrosis, and cultures grew *Enterobacter cloacae* and *Staphylococcus aureus*. The clinical response to drainage and intravenous antibiotics was excellent. There was no obvious source of seeding for *Enterobacter* pyomyositis; cobroscopic examination was unremarkable.

Medical records obtained from the community hospital revealed that the patient had withheld from her past medical history the ingestion of a comb, with resultant exploratory laparotomy, one year prior to admission. Also, the attending physician had noted a punctate lesion suspicious for a needle mark at the time of her presentation there. With this information, the biopsy specimens were re-examined under polarized light, revealing a large quantity of foreign material.

Discussion

Factitious disorder is defined by the *Diagnostic and Statistical Manual of Mental Disorders IV* as "physical or psychological symptoms that are intentionally produced or feigned in order to assume the sick role." In the factitious disorder, patients consciously produce or feign illness, but are not aware of underlying motivation. This is in contrast to malingering, in which findings or complaints are produced for conscious secondary gain (disability payments, time off work, etc.). Conversion disorder represents the other end of this spectrum, with symptoms produced unconsciously.[1]

The best known type of factitious disorder is Munchausen's syndrome, named for an 18th century German nobleman whose fantastic stories of adventures abroad were published in 1785. Munchausen's syndrome is characterized by patients essentially making a career of illness, with a history of repeated hospitalizations.[2]

The diagnosis of Munchausen's syndrome is usually clear from a review of the patient's medical record.[1] Less than 10% of patients with factitious disorders have Munchausen's syndrome. Most patients produce symptoms episodically, usually during periods of personal stress that may not be apparent to outsiders. They often appear to be functioning and well-adjusted, with steady employment and stable households.[2]

There are several possible clues to the presence of a factitious disorder. Usually inconsistency can be recognized in the clinical picture, such as in the case presented above. Laboratory findings are frequently difficult to explain by natural pathologic processes.[3] At least 75% of cases involve patients in a health care-related occupation, or who have relatives in such an occupation. Finally, although the symptoms and/or findings in a factitious disorder may suggest a serious disease process, the patients often seem relatively unconcerned. The diagnosis is not an easy one, and the disorder may not be diagnosed for five to ten years after onset.[2]

The best therapeutic approach appears to be indirect.[1,2] When directly confronted with evidence that the illness is self-induced, patients typically will deny it vehemently. As accusations mount, they often depart under acrimonious circumstances, and seek medical care elsewhere, repeating the cycle. In contrast, when more covertly challenged in a way that allows them to

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Presented by David Heusinkveld, M.D., Hugh J. Morgan chief medical resident, Vanderbilt University Medical Center, Nashville.

save face, long-term benefits may be achieved. For example, "I think the stress in your life is having an impact on your health" is much less threatening than, "We think you are not really ill, but that you are making yourself sick."[2]

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Chronic Histoplasmosis

Case Report

A 67-year-old man was admitted to Vanderbilt University Medical Center with weakness, anorexia, and weight loss. He had been in his usual state of health until eight months previously, when he noted multiple discrete, raised, erythematous, coin-sized lesions on his shins bilaterally. These developed rapidly, were present for several weeks, then slowly healed. He had no other symptoms such as fever, night sweats, arthralgia, nausea, vomiting, diarrhea, or ocular irregularities. He did not seek medical attention, but became aware of a reduced appetite that had persisted until admission, and resulted in a 40-lb weight loss. He had no abdominal pain or other gastrointestinal complaints, but did note mild discomfort on the posterior aspect of his tongue, especially when swallowing. Late in the course of his illness, he noted diffuse weakness and fatigue, without numbness, tingling, or decreased coordination. Review of systems was notable only for the several round, quarter-sized lesions noted above, which were minimally tender to palpation.

The patient gave a 150-plus-pack smoking history, with resultant severe chronic obstructive pulmonary disease, for which he was oxygen- and steroid-dependent. His medications included ipratropium bromide and albuterol metered dose inhalers, and prednisone 10 mg/day; he used oxygen at 2 liters/min via nasal canula. There had been no changes in his medications over the past year. Physical examination revealed a cachectic man in no distress, receiving oxygen by nasal canula, afebrile with normal vital signs. He had a centrally located ulcerated mass on the dorsal surface of the tongue posteriorly. His neck was supple, without lymphadenopathy, and his lungs were clear. Heart sounds were normal, and there was no hepatosplenomegaly. Extremities showed only the lower extremity lesions previously described, and the neurologic examination was normal.

Laboratory studies revealed a minimal leukopenia with WBC count 3,100/cu mm with a normal differential, hematocrit 38% with normal indices, and platelets 180,000/cu mm. The albumin was 2.8 gm/dl. Other routine laboratory values were within normal limits. Radiograph of the chest was clear, and EKG was unremarkable. CT scan of the oropharynx and neck showed no masses or adenopathy. A biopsy taken from the lesion on the tongue showed histoplasmosis.

Discussion

Histoplasma capsulatum is a dimorphic fungus that causes histoplasmosis, a mycosis endemic to the Ohio River Valley and its tributaries. It is found variably in subtropical Central and South America as well, living in soil, usually in areas with accumulations of bird or bat droppings.[1]

Infection in man occurs primarily through inhalation of spores. Most cases in immunocompetent hosts have a subclinical, localized pulmonary process, the endstage sequelae of which are limited to a few calcified granulomata. Occasionally, when a large inoculum is presented to the alveoli, a syndrome of acute pulmonary histoplasmosis results. This is characterized by fever, progressive diffuse pulmonary infiltrates, hypoxia, and sometimes death from pulmonary insufficiency.[2]

Disseminated histoplasmosis appears to develop when there is a defect in host immunity. Infants are susceptible to developing an overwhelming, rapidly progressive infection characterized by fever, cough, gastroenterologic symptoms, bone marrow involvement, and massive enlargement of the liver and spleen. Immunosuppressed adults may follow one of two different clinical patterns. In the first, termed subacute disseminated histoplasmosis, patients have a low-grade, sometimes intermittent fever that often persists for weeks or months. Other symptoms are nonspecific, most frequently weight loss and malaise. A large majority develop some focal infection, with gastrointestinal ulceration, adrenal destruction, meningitis, and endocarditis.

Chronic disseminated histoplasmosis represents the extreme end of this spectrum. Fever is not usual in this group, and systemic symptoms are generally minimal. Over a period of years, patients note weight loss, fatiguability, and generalized wasting. Examination is generally unremarkable, and hematologic abnormalities are minimal if present at all. Focal lesions are again common, especially oropharyngeal lesions, which typically appear as deep ulcers with heaped-up borders. Patients may also develop erythema nodosum at some point in the course of their illness. Undiagnosed and untreated, the infection may progress to a fatal outcome slowly and intermittently over 10 to 20 years.[3]

Treatment may be by oral or intravenous routes, depending on the severity of illness. Vital organ involvement of the type described above is always an indication for amphotericin B, with a total dose of 35 mg/kg. Less severe cases may be treated with ketoconazole, or with the newer agent itraconazole. Treatment should be continued for six months to one year when the oral route is instituted.[1] ☐

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Preventive Medicine Series

Smoking Cessation and the Doctor's Office

KAREN C. JOHNSON, M.D., MPH

Cigarette smoking is the leading preventable cause of morbidity and mortality in the United States today.[1] Over 400,000 deaths occur annually that can be directly attributed to smoking. It has been estimated that smoking accounts for one out of every six deaths in the United States, resulting in over one million years of potential life lost before the age of 65 each year.[2,3]

A large body of epidemiologic evidence from both case control and prospective studies has conclusively demonstrated that smoking increases mortality rates from coronary heart disease, chronic lung disease, and lung cancer, as well as overall, all-cause mortality rates for both men and women.[1] Cigarette smoking by women also increases the risk of adverse outcomes of pregnancy such as spontaneous abortion and premature rupture of membranes, and is a major cause of increased perinatal mortality.[1]

Research has now demonstrated that exposure to cigarette smoke is harmful to nonsmokers as well as to smokers. Exposure to secondhand smoke is a significant contributing cause of smoking-related diseases, including lung cancer in healthy nonsmokers.[4] Children exposed to secondhand smoke from parents who smoke have a higher frequency of respiratory infections and respiratory symptoms than children of nonsmoking parents do.[4]

Although these detrimental effects of smoking are now well known, it was only in 1964 that the former Surgeon General of the U.S. Public Health Service, Dr. Luther L. Terry, released the first official government report asserting that cigarette smoking causes lung cancer and other diseases.[1] Since the release of that landmark report, an effective antismoking campaign has been launched in the United States. Increasing numbers of smokers have given up the habit; in 1991, approximately 43 million adults were "former" smokers.[5] However, despite the accomplishments of this public health initiative, approximately 89.8 million adults—or over 25% of adults in the United States—continue to smoke. The prevalence of cigarette smoking remains higher among those aged 25 to 55 years, African-American, blue collar workers and less educated persons than in the overall population.[5] Thus, cigarette smoking remains a significant public health problem. Recent reports have suggested that in certain groups, such as young women, the number of new smokers has actually increased.

Smoking cessation has immediate and substantial health benefits for persons at all ages with and without smoking related diseases. Ex-smokers live longer than current smokers because they have a reduced risk of dying from specific smoking-related diseases.[6]

Studies have shown a decrease in coronary heart disease mortality for ex-smokers as compared to current smokers, and this decrease is thought to be etiology related.[7,8] The decreased risk of coronary disease mortality experienced by ex-smokers appears to begin relatively quickly after smoking is stopped, suggesting that effects of cigarette smoking are highly reversible. Smoking cessation is also associated with reduced risk of dying from chronic obstructive pulmonary disease. In a study of U.S. veterans, ex-smokers who quit smoking for reasons other than ill health had lower mortality rates due to chronic obstructive pulmonary disease than did current smokers, but continued to have higher rates than those who never smoked.[9] Smoking cessation also reduces the risk of death due to lung cancer. Persons who quit smoking for ten or more years have rates of lung cancer that approach that of nonsmokers. Some increased risk remains, however, even after ten years, especially for heavy smokers.[10]

These data indicate that cigarette smoking remains a significant public health problem but that stopping smoking can reduce the risk to individual patients. Health care providers have a unique opportunity to modify the smoking behavior of their patients. It is estimated that 70% of adult smokers see a physician each year and that the smoking behavior of these patients could potentially be modified by smoking cessation programs at these times.[11] In addition, previous studies have demonstrated that brief physician directions to quit smoking substantially increase the rate of those who do stop smoking.[12] Wilson et al[12] demonstrated that 8.8% of patients who received only brief training in smoking cessation techniques quit, whereas only half as many (4.4%) of those without such guidance stop.

In addition to smoking cessation advice, physicians can offer their patients effective pharmacologic

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From the Department of Preventive Medicine, University of Tennessee College of Medicine, Memphis.

therapy, that is, nicotine substitution products. A number of randomized trials have demonstrated the effectiveness of the patch and the gum forms of nicotine. A study by Hjalmarson[13] demonstrated that 29% of patients treated with nicotine gum stopped smoking as compared to only 13% of control patients.

Increased quit rates are also observed with programs that involve more than one smoking cessation modality, such as personalized face-to-face advice by both physicians and nonphysicians, prescribing nicotine substitution products, providing smokers with self-help materials, and referring smokers to smoking cessation programs.[14]

What can a physician with little formal training in effective smoking cessation techniques do in an office-based practice to help patients stop smoking? Recently, the National Cancer Institute developed a manual entitled "How to Help Your Patients Stop Smoking" that is designed specifically to help physicians implement a smoking cessation program in their practices.[15] This manual gives specific suggestions for creating smoking cessation programs for use by busy physicians and medical office support staff. The manual recommends, first, that a smoking cessation program include creating a smoke-free office by removing ashtrays, putting up no-smoking signs, and eliminating from the waiting areas reading materials such as magazines that promote tobacco use. It further recommends assessing the smoking status of all patients and specifically identifying all patients who smoke. This may be accomplished by office staff while, for example, taking vital signs. Third, it emphasizes the importance of developing patient-specific smoking cessation plans as an integral part of any smoking cessation program. How to do so is well covered in the National Cancer Institute manual. Recommendations include advising all smokers to stop smoking, discussing the patient's personal risks of smoking and the direct benefits of smoking cessation, helping the patient set a quit date, providing specifically selected self-help materials to the patient, offering a prescription for nicotine substitution products such as gum or patches, and providing follow-up support for persons trying to quit smoking by arranging follow-up visits or telephone calls from medical support staff. Additional information about this manual can be obtained from the National Cancer Institute at 1-800-4-CANCER.

If physicians would implement a smoking cessation program, delivering simple and direct smoking cessation messages to each smoking patient at every visit, and offering nicotine substitution products to interested patients, the public health impact would be far-reaching. ❑

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HELP FOR IMPAIRED PHYSICIANS

The Tennessee Medical Foundation Impaired Physician Peer Review Committee assists doctors who are suffering from the disease of chemical dependence, or mental or emotional illness, or both, including certain behaviors problematic for physicians. The thrust of the program is rehabilitative, not punitive. The Committee is composed of physicians who have special expertise in these areas, some from personal experience. Effective treatment for these illnesses is achieved most easily when the disease or illness is detected early. The Committee urges family, friends, and associates to avoid misguided sympathy which enables a physician's impaired condition to deteriorate.

HELP US TO HELP

Call the TMF Impaired Physician Program at (615) 385-3319; outside Nashville call collect. Telephone message service available around the clock.

Department of Health Report

Healthy Start

SUELLEN JOYNER

Every family can use a little support when a new baby arrives. And these days many families need more than that. That is the idea behind a new state program called Healthy Start. Modeled after a very successful program in Hawaii, and a program of the National Committee for the Prevention of Child Abuse (NCPCA) known as Healthy Families America, Tennessee's Healthy Start Program was established through the Tennessee Early Childhood Development Act of 1993. The program is funded through the federal Family Preservation and Family Support Act.

Healthy Start provides trained workers who visit the new parents in their own homes and assist them in dealing with the challenges of a new infant. Families are educated about child health and child development, encouraged to have their children receive developmental screenings and immunizations, and taught life-coping and parenting skills. They are also linked to community resources to meet identified family needs. The services are voluntary, and may continue for up to five years, depending on the needs of the family.

In the fall of 1994, the Department of Health issued a request for grant proposals to approximately 300 agencies and organizations for the implementation of pilot sites for the Healthy Start Program. Thirty proposals were reviewed, with funds being available for five sites. Three urban and two rural projects, described below, were selected. They are LeBonheur Children's Medical Center in Memphis, Metro Davidson County Health Department in Nashville, the Helen Ross McNabb Mental Health Center in Knoxville, the University of Tennessee Martin serving Carroll, Gibson, Henry, Obion, and Weakley Counties, and the Exchange Club/ Holland J. Stephens Center of Livingston serving Jackson, Putnam, Overton, and White Counties.

The pilot sites began operation in December 1994 with the identification of key staff and preparation for staff training. The program model requires intensive training for the family support workers that is conducted by certified trainers through the NCPCA. Program implementation schedules vary by site, but all projects are expected to be providing services by spring of 1995. An independent evaluation of the project is being conducted by the State to assure that the objectives set out in the Early Childhood Development Act are being met. The projects are expected to assure that (1) family stress is reduced and family functioning is improved, (2) children are fully immunized by the age of two, (3) all children receive developmental screening and follow-up services, (4) all children are free from abuse and neglect, and (5) mothers are enrolled in prenatal care by the end of the first trimester of any subsequent pregnancy.

As part of their project, the *Helen Ross McNabb Center* has expanded its Healthy Families East Tennessee project, funded through the Department of Human Services, to all first-time expectant mothers at risk in Knox County. First-time births accounted for 1,689 births in 1992, 36% of the births in the county. They anticipate providing intensive family support services for 225 families during the first year.

The project includes collaboration with the four major hospitals in Knox County, as well as the Knox County Health Department. An early-identification worker visits each hospital each day to approach new parents about the service. Families are also identified through referral from private OB/GYN groups in the community and the county health department. To determine risk the project uses the same "Family Stress Checklist" used by the Hawaii Healthy Start Program.

A distinctive feature of the McNabb proposal is the emphasis on involving the father of the child, the extended family, and other support persons to capitalize on intergenerational resources to establish a support system. The project includes a fathers' outreach component to focus on the father's role in the family unit.

Metropolitan Nashville/Davidson County Health Department is establishing nine teams in three locations (Cayce-Waverly Belmont, Nashville General Hospital/ MIC, and the Metro Health Department) using nurses funded through this grant and family support workers funded through the AmeriCorps program. This linkage provides approximately $700,000 in contractor participation support to the project. Working collaboratively with the participating agencies, women are identified prenatally through the prenatal services of the United Neighborhood Health Centers, and General Hospital, as well as by referral from sources including the local DHS office, Crittenton Services, Inc., Matthew Walker Health Center, and private physicians. United Way volunteers identify and risk-screen postpartum women prior to discharge from hospitals. Women at high risk

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From the Tennessee Department of Health, Nashville. Ms. Joyner is director of Family Health Services are referred to a family support worker. Family support services, including developmental assessments, are provided by trained AmeriCorps staff at least weekly, with a follow-up visit from the nurse monthly.

LeBonheur Children's Medical Center is employing a team of family support workers to provide services to each of two planning districts in Shelby County: one in North Memphis and one in South Memphis. These areas are similar demographically in terms of their high percentages of poverty, subsidized housing, and rates of unemployment, along with their high rating on the health status indicators. The project will serve 75 families from each area during the first year, and will focus on single, first-time mothers with incomes below the federal poverty level guidelines. Participants must reside within one of the two target areas.

Early-identification workers administer a pre-application questionnaire to determine the resources that may be needed. The individualized family plan is developed by the family support worker who serves as the family's primary contact and home visitor during their participation in the project. Health department nurses conduct screenings and assess the health of the mother and child.

The University of Tennessee Martin provides family support services to first-time parents in Carroll, Gibson, Henry, Obion, and Weakley Counties. Families in Benton, Crockett, Dyer, and Lake Counties whose first children are born in the adjoining pilot site counties will be offered limited services, and may serve as a comparison group for the pilot project.

First-time parents are identified through agreements with medical facilities in the target counties, local health department programs such as prenatal and WIC, and community resources such as private physicians, school guidance counselors, and other community resources. Intensive services are offered on a voluntary basis to families assessed to be at high risk for child abuse and neglect. One hundred and two families will be served during the first project year.

The Exchange Club/Holland J. Stephens Center of Livingston provides family support services to first-time mothers of all ages, and teen mothers (ages 19 and under) with subsequent births, in Jackson, Overton, Putnam, and White Counties. Teen mothers are especially targeted in this project. The target population also includes single mothers and mothers with late or without prenatal care.

The project includes a subcontract with Tennessee Technological University for technical assistance and training, early identification and child finding, and program evaluation. Through this subcontract, the Tennessee Early Intervention System is linked to the project in that "parent contacts" in the four counties will serve as part-time early identification workers in their home counties. Both hospitals offering obstetrical services within the target area have agreed to serve as referral sources for mothers at the time of birth. Paraprofessional family support workers begin weekly in-home visits when the mother and new infant return home from the hospital. ❑

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Loss Prevention Case of the Month

A Good History Usually Gives a Diagnosis

J. KELLEY AVERY, M.D.

Case Report

At 3:00 AM abdominal pain and vomiting began. At 4:30 AM she was seen by the emergency department (ED) physician, who discharged her at 6:30 AM. Thirty hours later she was returned to the ED in cardiorespiratory arrest, and died following an emergency laparotomy. She was 22 years of age!

When the patient was seen on admission to the ED the history was recorded by the ED physician: "Abdominal pain since 3:00 AM. Vomited two times. Normal BM yesterday. No flatus since onset. Menstrual history normal." Examination: "22-year-old woman appears in pain. VS normal. Chest, heart, lungs OK. Abdominal tenderness, lower abdomen, but no guarding or rebound. Less tenderness mid-abdomen. Bowel sounds positive."

Laboratory studies were unremarkable except for a blood glucose of 194 mg/dl.

Nursing note at 4:30 AM: "Alert and oriented. Appears in pain. Rolling around on the stretcher. Medicated for pain. Sleeping since. The record indicates that she was given Talwin 30 mg and Phenergan 25 mg by injection at 5:50 AM. Discharged home with instructions at 6:35 AM." She was given an antacid/antispasmodic and Phenergan suppositories for use at home. She was told to return to ED if further problems occurred "this weekend."

The narrative is blank until she returned "this weekend" 30 hours after leaving the ED. CPR was in progress when the patient arrived. She was resuscitated, hydrated, acidosis corrected, and taken to the OR, where strangulated, infarcted small bowel was found to have herniated through a defect in the mesentery. The dead bowel was resected, but despite vigorous and heroic efforts, the patient died about 6:00 PM, four hours after surgery.

In the lawsuit that followed, the physician was charged with failure to take an adequate history and do a thorough physical examination, failure to monitor adequately in the ED, and failure to use appropriate testing to determine the true nature of her complaints. Going to trial with a record as incomplete as this one was considered unwise, and the case was settled.

Loss Prevention Comments

The loss prevention lesson to be learned here can be derived from the charges filed against this ED physician. There was ample evidence that the doctor did not get a good history. He missed the significance of the sudden onset of severe pain and the prompt vomiting that followed. He made no comment as to the apparent severity of the pain. He recorded "No flatus since onset." The nurse, in her note two hours before the patient was discharged from the ED, noted that the patient was in pain severe enough to cause her to roll around on the table and to need the side rails to keep her on the stretcher. There was no note that the patient was reevaluated by the ED physician in view of these findings. In fact, there was no evidence in the record that the patient was checked at all from the time of her initial examination to the time of her discharge except to administer the injection. This gave validity to the charge of failure to adequately monitor the patient in the ED.

The initial examination was brief as far as the record is concerned. No pelvic examination was done even though it is apparent that the physician was careful to obtain an acceptable menstrual history. One wonders if the doctor put his hand on this young woman's abdomen or listened to the bowel sounds after the initial examination. As rapidly as this patient's condition was deteriorating, it is reasonable to speculate that had careful monitoring been done, the bowel sounds would have been found hyperactive, and the abdomen itself would have been more generally tender with some distension, suggesting the need for an abdominal x-ray.

We had no diagnosis when a narcotic was given to relieve the symptoms, which, if carefully observed, would have led to the suspicion of a rapidly progressing process demanding early exploration of the abdomen.

It was the weekend, the ED was busy, and the tendency was, as it frequently is, to bet on the "odds" and not think about the "long shot." Almost every time, when confronted by a patient with an acute problem, a physician needs to prepare for the worst while hoping for the best. ❑

Dr. Avery is chairman of the Loss Prevention Committee, State Volunteer Mutual Insurance Company, Brentwood.

The Case of the Month is taken from actual Tennessee closed claims. An attempt is made to fictionalize the material in order to make it less easy to identify. If you recognize your own case, please be assured that it is presented solely for the purpose of emphasizing the issues presented.

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president's page

VIRGIL H. CROWDER JR.

A Memorable Year

As I near the end of my term as president of the Tennessee Medical Association, I want to thank the Board and the staff of the TMA for their support during a very difficult year. The problems facing medicine today are as serious as any that we have faced in the past.

TennCare is entering into its second year and remains as a ship without a helm. The lack of understanding the meaning of managed care seems to have been passed to the new administration. We must continue to educate the leaders of the state on the major deficiencies of a flawed plan. We must try to help develop a health care plan for the indigent population of our state.

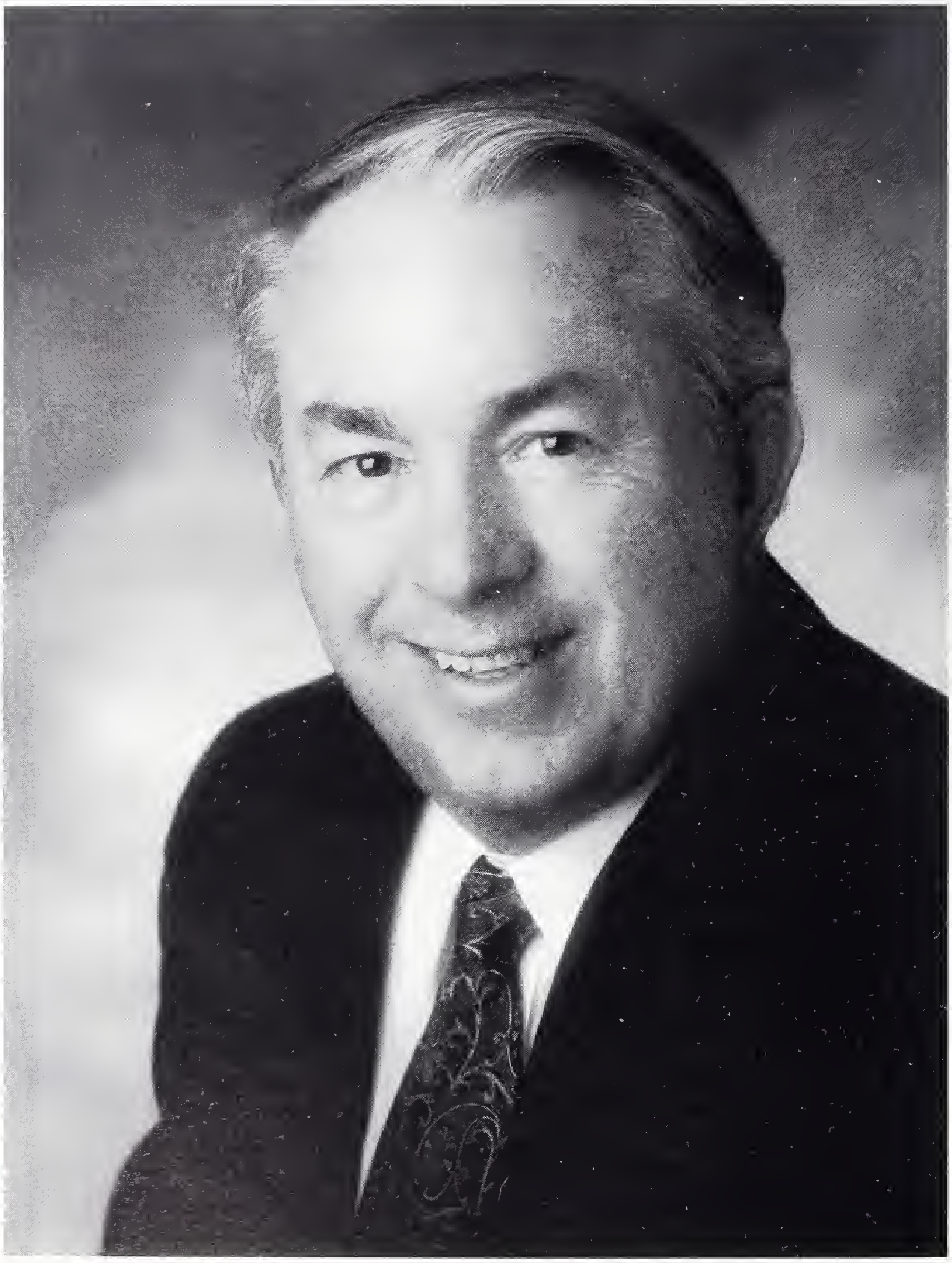
The next year we hope will bring gradual changes in TennCare to make it a program that can be carefully audited by the state administrators and can offer physicians an opportunity to serve our patients in a proper and economically feasible manner.

I know that the leadership role of our Association that is being assumed by Robert Bowers, M.D. of Chattanooga is in capable hands. He has been active in medical and civic affairs at both the local and state levels. His leadership abilities have been well proven in his development of the CARE program of the Tennessee Medical Association. His practice of medicine is centered in otolaryngology, and he is a past chairman and current member of the Board of Memorial Hospital in Chattanooga. These positions give him additional insight into some of the issues that we must face in the coming months.

In closing I would like to thank the membership for the privilege of serving as your president this year. The new friends that I have made this year are a special reward of the office. I look forward to seeing many of you at the annual meeting. We think that the new expanded format will have something to offer all physicians and their spouses.

Virgil H Crowder Jr. M.D.

THE NEW PRESIDENT



ROBERT E. BOWERS, M.D.
CHATTANOOGA

ROBERT E. BOWERS, M.D.

141st President—Tennessee Medical Association

Just as the state of Tennessee continues to face enormous change in its health care delivery system, the Tennessee Medical Association is also at the brink of great change. TMA transition takes place this month not only among the physician leadership but also internally as staff leadership changes hands.

Robert E. Bowers, M.D., 64, a board-certified otolaryngologist with Chattanooga Ear, Nose and Throat Associates and past chairman of the board and chief of staff of Memorial Hospital in Chattanooga, is TMA's 141st president.

"I am honored to serve as TMA's president, but at the same time, I understand the challenges facing our profession and Association as our health care delivery system continues to change in our state," said Dr. Bowers. "As a physician, I have a responsibility to my patients. I must ensure that they receive quality and appropriate health care at all times. I believe that I must use my role as TMA president to act as a patient advocate for not only my patients but for the people of Tennessee."

A native of High Point, North Carolina, Dr. Bowers received his medical degree from Loma Linda University Medical School in California, after receiving his undergraduate degree from Southern College in Collegedale, Tennessee. He completed his internship in 1962 at San Bernardino County (Calif.) Hospital, where he also completed a family practice residency. He was a family practitioner in Dalton, Georgia for five years. He completed his otolaryngology residency at the University of Tennessee in Memphis and was a fellow at the Memphis Eye and Ear Hospital.

In addition to his new role as president, Dr. Bowers has previously served as a TMA Trustee from 1989 to 1991 and has been co-chairman of the TMA Communications and Public Service Committee since 1988. He has served as an alternate delegate from Tennessee to the American Medical Association since 1987, and is currently a delegate to the AMA from TMA.

Dr. Bowers served as president of the Chattanooga/Hamilton County Medical Society in 1986. He is a member in good standing of the American Medical Association, the American Academy of Otolaryngology, and the American Academy of ENT Allergy.

The TMA Board of Trustees presented Dr. Bowers with the Distinguished Service Award in 1990 for his overwhelming contribution made to the Association through the development of the CARE program—TMA's long range communications plan. The Tennessee Hospital Association honored him in 1994 with their Meritorious Service Award for his contributions to the formation of a new Women's Center—a joint effort between Memorial Hospital and Erlanger Medical Center in Chattanooga.

When away from his office, Dr. Bowers enjoys golf and overseeing his cattle farm in north Georgia. He and his wife, Norma, are members of the Collegedale Seventh-Day Adventist Church. They have three sons, David, Gary, and Mark; and a daughter, Julie.

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APRIL, 1995

editorials

Preventive Medicine Series

When I was a medical student, and indeed for several years after the close of the Second World War, preventive medicine's role was relegated largely to the prevention of infectious diseases, with a minor role in nutrition. Preventive medicine had come out of the closet and reached the public's attention with the publication of Surgeon-General Thomas Parran's article, "Why Don't We Stamp Out Syphilis," that appeared in the *Readers Digest*, I think in 1938, though maybe a couple of years sooner. Opening up the "S" word to public scrutiny might have left some proper people aghast, but it did get the ball rolling just in time for the troops to be able to face the venereal disease problems that would be theirs during the next few years, and the public's forever after.

Soon after the Second World War, Alton Ochsner, M.D. mounted his soap box in New Orleans, and another war began, this time against cigarette smoke, confined at that time to smoking as a cause of lung cancer. That war started small, with only a few combatants, but it quickly blossomed into the full flower it is today, until, at least in the United States, and increasingly elsewhere, it has dwindled to a mopping up operation, with a harried tobacco industry in retreat and defending its rear in an attempt to salvage anything at all of its former domain, predominantly its remaining youthful adherents. Those youths still see smoking as cool, blindly discounting the looming slab of cool where Joe Camel will help a lot of them wind up prematurely. The industry also targets for destruction smokers in other countries, particularly in the Third World, but the natives even there are becoming restless, too.

With the burgeoning activity against tobacco, preventive medicine was changed forever. Trying to get everyone possible into the act, and speaking from their usual preoccupation with words as a substitute for action, the feds allowed as how "preventive *health care*" would be a more appropriate term than preventive *medicine*. I have no particular problem with their terminology, at least not there, but for our purposes I'm going to stick to medical terminology, and so have chosen to refer to our new series, the initial contribution of which appears in this issue, as the Preventive Medicine Series, even though David M. Mirvis, M.D., who sired the series and will coordinate it, informs me that he intends to introduce other health-related topics into it.

The Preventive Medicine Series will comprise contributions from the Prevention Center, a specialized, interdisciplinary academic unit of the University of Tennessee, Memphis, and the University of Memphis. The Center's goals include conducting research and public education in preventive medicine, health services delivery, and health care policy. Members of the Center include faculty members with specialties of internal medicine, pediatrics, psychology, biostatistics and epidemiology, nutrition, nursing, health care policy, and health economics. William Applegate, M.D., Professor of

Preventive Medicine and Medicine at the University of Tennessee College of Medicine, serves as the Director of the Prevention Center, and Dr. Mirvis as head of the health services and health policy research division of the Center.

Articles to appear in the series will address critical issues in preventive medicine or health care policy, and be written by appropriate Prevention Center staff with relevant expertise. You might expect to find there, for instance, such diverse topics as an analysis of results of recently completed multicenter trials on cardiovascular disease, or a critical review of national or state health care reform issues such as physician manpower planning.

In his proposal to me, Dr. Mirvis suggested submitting quarterly contributions. His first submission included the first two papers. It may turn out that we will publish the papers either oftener than, or not so often as, quarterly, depending (conforming to somebody's—I forget whose—law that everything depends). With Dr. Mirvis' enthusiasm the former might turn out to be the case. On the other hand, the latter might turn out to be a more realistic schedule, dictated by, among other things, other more pressing or more appealing commitments of his staff, and their consequent lesser enthusiasm, as well as mine.

For now, though, expect at least one more paper. Then wait and see. As for my own enthusiasm, I like what I have seen thus far. I trust you will, too, and will find the series helpful.

J.B.T.

War Is Hell

Before I get started on what I have no doubt is going to be considered by some of the younger of you as a view from the soapbox, and maybe a distorted one, at that, I need to say that this piece is not about morality. You need to keep that firmly in mind as you read on. It is not about morality at all. It is about reality.

In almost all if not actually all cultures, or at least those whose people look to a beneficent god, there is a moral absolute against the taking of a life. What that means depends. What it depends upon is the context of the particular culture involved. The proscription is generally invoked against the taking of human life, but some—not many, at least in Western Civilization, so-called, but some—include any *animal* life. The Hindus do so because that mosquito that is biting you might be your grandmother. That puts me in mind of the anti-vivisectionist dowager who, when asked what medical research would do if they could no longer use animals, retorted, "Use the Marines!" Though that story may be apocryphal, there is also good reason to believe it might not be. To show you how mankind can juggle language, no matter what, is the way in which the Judeo-Christian injunction against killing, as documented in the Fourth Commandment of the Decalogue, has lately been retranslated so as to obviate the necessity for absolution from killing other people in war, police action, and so on, since that technically isn't murder. The commandment has conveniently "progressed" from "Thou shalt not kill" to "Thou shalt do no murder." It is said to be a more accurate translation.

Nice try!

The title for this piece is a quotation well known in the South, or maybe, more accurately, to Southerners, since *real* Southerners are nowadays an endangered species in the South. For instance, Tennesseans of neither party had the opportunity to vote for a Southerner for Governor of our state this year, and so the new governor, a Republican, replaced the portrait of Andrew Jackson in his office with one of Abraham Lincoln. That was his right, of course, since it is his office, but without impugning in any way Mr. Lincoln's place in either history or the hearts of his countrymen, I would point out that while the transfer was to Gov. Sundquist simply a symbol of a change in the reigning political party, to some of us died-in-the-wool unreconstructed rebel Tennesseans it was an arbitrary action by an *auslander* with no appreciation of the state's heritage. So that I won't be accused simply of tasting sour grapes, I wish also to point out that I contributed to Gov. Sundquist's campaign, and would have done so even had I known what he was going to do with Old Hickory. Under the circumstances, therefore, I am neither angered nor astounded. Only disappointed. But life goes on. And anyhow, I digress.

It was during the late unpleasantness between the states that Gen. William Tecumseh Sherman of the Union Army uttered the words of the title as a rebuke to do-gooders, a response to their rebuke of him for his total devastation of a wide swath of the South, including Atlanta, in his march from Tennessee through Georgia to the sea at Savannah. Unlike a lot of present day historians, who tend toward revisionism, and who bear a marked resemblance to those who deplored Gen. Sherman's activities, Gen. Sherman understood war. (Actually, according to my grandmother, who was a child living in Savannah at the time, though they hated him for it, the Confederates also understood why he did it.)

There is no way to make war anything but Hell, that is if winning is the object. There is no way to fight a humane war if you wish to stay alive yourself. Those in the "peace-keeping" forces under the flag of the United Nations are regularly getting killed, whether deliberately or not. To the dead and bereaved, which it is makes no difference. Like the noble 600 in the Light Brigade they die for nothing better than obedience to orders. I challenge anyone to show me where any of those peacekeeping missions has accomplished anything more than to allow our leaders to say to the world that we're doing something, even if it's wrong, and give the combatants a chance to regroup to fight another day. To end such parochial devastation, people must first grow tired of killing and being killed, as the Irish apparently have in Northern Ireland, and perhaps the Angolans also. People committed to killing and being killed prove obdurate—not to mention dangerous to the life and limb to those who trespass their killing fields.

Over the last few decades I have accorded desultory attention to the running quarrel between the apologists for and the aghast over the use of the hydrogen bomb against Hiroshima and Nagasaki, Japan in what understandably turned out to be the final days of the Second World War. The results have come to be known amongst the aghast as the nuclear holocaust, likening it to what Hitler perpetrated against the Jews in Germany. As this August 14 will mark the 50th anniversary of the atomic bombing, the quarrel has intensified, centered around the Smithsonian Institution's exhibit concerning the *Enola Gay*, the B-29 that carried the bomb. Though some of you youngsters may not believe it, that was not an issue, or at least not a major one, at the time. There were more—vastly more—individuals in the United States, and indeed among the Allies generally, who were more—vastly more—aghast over the possibility of their own death or the death of those dear to them than over the extinction of however many of the enemy it took to forestall those deaths.

It worked.

The quarrel over Hiroshima today seems to me to be largely between those who were there and those who weren't. By "there" I mean not Hiroshima but either the United States or its armed forces in 1945. Those who were there saw using "The Bomb" as a way of getting the boys—not only American boys, but Japanese, too—home sooner, and, what's more, alive. I myself was at Camp Lee, Virginia, on V-J day. I had fully expected to be somewhere in the Pacific before Christmas, just as soon as I had completed my required training at the Army Medical Field Service School in Carlisle, Pa. My kid brother was already a naval officer on sea duty. So you know how I felt about it then. And I still do.

Those who weren't there compare it to the Nazi Holocaust. There is, of course, a basis for comparison in the results—at Ground Zero timewise, but not long-term. In the first place, the motivation behind the two was far different. The one was genocide; the other was winning an unjust war. Getting back to the absolutes, there is no justification for either genocide or war, since violence of any kind is a morally, as well as civilly, unacceptable method for settling anything.

There are only two outcomes to war, despite attempts on occasion to manufacture other alternatives. You win it or you lose it. Stopping it short of such a final solution requires a subsequent long-term police action of a so-called, or perhaps better, self-styled, super-power to keep the truce in place. We currently have examples of that all over the place, and the ultimate grounds-keeper is you-know-who, the UN to the contrary notwithstanding.

Once there is a war, the only realistic goal is to end it as quickly as possible, which means using whatever means are at hand that one can get away with using—which means whatever will not be used against you in retaliation. It is sheer nonsense to believe that nuclear war between the United States and the Soviet Union was averted by anything other than a balance of power. Any show of good will was fiction provided as a face-saving device for caution. Hitler used the V-2 rockets against Britain, devastating London and other cities of the UK, confident that the Allies had no similar weapon to use against Germany. The Allies countered with the fire-bombing of German cities, ultimately the more effective weapon, but only because Allied bombing prevented the continued manufacture of the V-2.

The atom bomb was the ultimate weapon, and I think there is little doubt that it was largely, maybe entirely, the horror of Hiroshima and Nagasaki that has prevented its use anywhere else. The weapon would certainly have had to be tested by someone under field conditions. It was—by the United States. It could be, and indeed has been, argued that the outcome was a just and moral one, since it was the aggressor that paid the price for that piece of prophylaxis. Personally, I think it inappropriate to invoke morality at all, or immorality, either, in such a situation.

I think I'd stop with poetic justice, and can the rhetoric.

J.B.T.

. . . Where No One Has Gone Before

The title of this piece is a small but harmless conceit taken from the mission statement of the good starship Enterprise in the popular television series *Star Trek* to boldly go where no one (originally, in a time mercifully less "politically correct," it was ". . . where no man") has gone before. Having said that, I don't wish to be misinterpreted as denigrating or casting aspersions on either the series or its author, Gene Roddenberry, since I'm a Trekkie of sorts—not a died-in-the-wool, take-no-prisoners type Trekkie, or, as they (not we) apparently prefer to be referred to now, Trekk*er*, of the sort that goes in costume to Star Trek conventions, but nevertheless an admirer and sometime follower of Captains James Kirk and Jean-Luc Picard. I call it a conceit simply because no one in the Federation or otherwise knows for sure that Buck Rogers or the slightly later Flash Gordon and colleagues (and/or opponents) hadn't been there before them. After all, though space is a big place, those folks did get around, too, and are no less real than Picard. Whether or not they had been there before in no way detracts from the mission statement, of course; it's just that I've never seen the accomplishments of those previous intrepid space travelers acknowledged. Maybe Roddenberry & Co. consider their handiwork to be of a different *genre*. If they do, that's OK with me, but I don't. Only the medium is different.

I read a piece the other day about how the comics, or the funnies, as I prefer out of precedent and long-standing habit to call them, have changed from the time they first became serialized in the early 1920s to after the Second World War and beyond. In the first place, the author of the article got his dates wrong; for reasons that would seem not to require an explanation, *The Katzenjammer Kids* got a name change during the First World War to *The Captain and the Kids*. The author of the piece I was reading allowed as how they were aptly called the "funnies" then because they were funny (he, like two of my children, was born in the 1940s) and were written mostly for five to ten year olds, who were the ones who read them. I have news for him.

Probably as large a percentage of the so-called comics are funny now as were funny then. Edgar Rice Burroughs' *Tarzan*, which was going strong in the late 1920s, was scarcely either "funny" or written for five to ten year olds. The author also opines that cruelty and gratuitous violence have increased apace, even as superheroes have flourished. I'll put Flash Gordon's nemesis Ming the Merciless up against any modern day heavy for cruelty. Buck Rogers had a nemesis, too, though I forget his name. But no matter. I will concede looming grossness on the part not only of the villains, but of the superheroes as well. During all that time, space technology in the funnies has changed little. It's just that because of the advances in actual technology, the technology in the funnies (in which, for those purposes at least, I include both *Star Wars* and *Star Trek*; so sue me!) is less fantastic to us nowadays. In fact, we consider a thing extraordinary at all only because it hasn't actually been invented or discovered yet. Today we have full confidence that one day it will be; then, we were less certain.

I shall now try to make amends for having mentioned *Star Wars* and *Star Trek* in the same breath with the guts-and-gore "comics" in which, true to the guts-and-gore ethos of the adventure or crime films of today, rated R for violence, G&G spill out all over the floor or all over somebody just for the sake of letting (letting?) the viewer witness G&G spilling out all over the floor or all over somebody. There is plenty of violence in both series, but much of it is simply suggested rather than shown, especially in *Star Trek,* and there is little actual bloodletting or dismemberment on screen. In other words, it is tastefully done, without gratuitous violence.

I have from time to time deplored in this column the seeming need of writers and so on to deliver a message with their writings, particularly a message with political overtones. I have a confession to make. In expressing that accusation, I was deliberately and with full knowledge delivering a political message. I think few people who write have no personal agenda that they are trying to advance, even if it is done only subconsciously. The "and so on" above is to indicate that not only writers, but anyone else with access to public scrutiny has, and frequently takes advantage of, such an opportunity. Giuseppe Verdi, for example, became noted as a revolutionary by both his Italian compatriots and their Austrian oppressors with the performance of his early opera *Nabucco*, written about oppression of the Jews in Babylon, but with clear and intentional application to the present situation of the Italians. At least as much as anyone else, Verdi, a Lombard, was instrumental through his art in bringing together the disparate states of the Italian peninsula into a united Italy.

Without obvious sermonizing, Neville Shute's spellbinding and wonderfully entertaining novel *On the Beach* stands as a monument not only against war in general, but against nuclear war in particular. Not content to allow the inevitable motion picture that followed, which is still one of my all-time favorites, to speak for itself, the script writers felt called upon to add a couple of impassioned, and boring, antinuclear war speeches for nuclear scientist Fred Astair to deliver. Though their message is consonant with that implicit in Mr. Shute's book, it belabors the obvious, and clearly constitutes political overkill.

Which is what screenwriters have to watch out for. Perhaps it's just that they do not realize the power of the visual image on its own, or perhaps they do and are just following the advice of H. L. Menken that one should never overestimate the intelligence of the public, but movie and television script writers seem impelled to restate in words the obvious in the visual expression. On the other hand, maybe they just don't care, and get carried away with their own erudition.

Be forewarned, though, that almost every creator of almost all visual or auditory stimuli is lusting after your thought processes so as to diddle with them through their creations. I was about to exempt pure instrumental music from that all-encompassing blanket, but thought better of it as I recalled that the pipes can set Gaelic blood aboilin', often leading to bloodshed, which was in fact their *raison-d'etre*. It recalls the nickname of the Scottish highland regiments in their kilts during the First World War as "the Ladies from Hell." And of course all cheerleaders know the effects on contestants and fans alike of a good fight song. But I digress.

To return to Mr. Roddenberry and his creation. From *Star Trek*'s inception it has delivered a thinly veiled message about humanity—that it is possible, even necessary, for human beings of all races, creeds, and color of both sexes to cooperate and to live together in harmony. This has always been exemplified in the officers and crew of the Enterprise, which has comprised both male and female blacks, Asians, and whites of various ethnic backgrounds and persuasions, including Soviet citizens when they were on the "other" side, and so on. All were committed to dying for one another if necessary, and they sometimes have done so. Sometimes, too, interracial romance blossoms.

There always have to be villains in any good script, and so that no human being would have to be cast in such a role, which Roddenberry would not find politically correct, he created "humanoid" races from other star systems in the galaxy, some inherently good, if different, such as the Vulcans, and some inherently either difficult, such as the Klingons, or actually evil, and worse, for instance the Romulans. The Klingons eventually became allies, sometimes friends, and one of them even a trusted Star Fleet officer, proving that no one is unsalvageable. Even Q, who is patently Lucifer, or the Devil, shows incipient "humanity" at times (*humanity* or *human* being for Roddenberry's purposes always synonymous with inherent good—in fact, the best and highest).

Star Trek: the Second Generation has in the person of Jean-Luc Picard, aka Patrick Stuart, in real life an accomplished and world renowned Shakespearean actor, a thoroughly buttoned down, morally impeccable, absolutely scrupulous, duty-bound captain who is capable of rising up in righteous indignation against wrongdoing directed against any "sentient being," the term used to include humanoids as well as human beings. In doing so, Picard has been known more than once (once in any given episode, that is) to deliver a sermon, usually but not always short, against some human frailty, up and down the scale from incivility.

I think that for all his wit and learning, H. L. Menken's observation about human intelligence struck the thumb on its nail and not the nail on its head. Humankind's deficiency along such lines is more a short attention span than stupidity. I am very attached to *Star Trek*, and to Captains Kirk and Picard. I am not often very attached to Jean-Luc's sermons, since they tend to be gratuitous. If I agree with him, I just nod in agreement, whereas if I don't, I tend to nod off, an activity I suspect I share with the majority of watchers of that and almost everything else.

Buck Rogers and Flash Gordon aside, although the Enterprise and its crew, along with others in the Star Fleet, may be boldly going where no *one* has gone before, the same cannot be said for Jean-Luc when he is moralizing. In the first episode ever of such a scenario, as recorded in holy writ, there were four "sentient beings": God, the Serpent, Eve, and Adam. I put Adam last because the feminists' contention to the contrary notwithstanding, he was the one who came up with the short end, even though he was the only one listening while the others spoke. Three of the four participants were issuing instructions, directed either directly or indirectly toward Adam, and though God was the only one issuing them with authority, sad to say His didn't accomplish very much. Eve was listening to the snake while God was talking, and as it turned out, hers was the ultimate authority despite her short attention span, not because Adam wasn't paying attention to God, but because Adam perceived that Eve held the key to his satisfaction. Poor Adam failed to appreciate that it was for the short term only, and that the satisfaction would prove very short-lived.

Mankind persists in tuning out the wrong things, but right offhand I can't think of any situation where tuning the media out will make any difference at all one way or the other. This is a sort of primer on intellectual tampering by the media and how to recognize it. It's only if you don't know such attempts at tampering with your intellect are there that it can do you unwitting harm.

The rule of thumb is: Assume they are *always* there. That way, you'll be prepared!

J.B.T.

in memoriam

Edmund W. Benz, age 83. Died January 29, 1995. Graduate of Vanderbilt University School of Medicine. Member of Nashville Academy of Medicine.

Alan D. Glick, age 51. Died February 4, 1995. Graduate of Vanderbilt University School of Medicine. Member of Nashville Academy of Medicine.

J. S. Lyon, age 75. Died February 20, 1995. Graduate of University of Tennessee College of Medicine. Member of Roane-Anderson County Medical Society.

Edward M. Malone Jr., age 56. Died February 11, 1995. Graduate of University of Miami School of Medicine. Member of Knoxville Academy of Medicine.

Thomas Chester Moss, age 89. Died February 3, 1995. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

John Claiborne Thornton Jr., age 79. Died January 13, 1995. Graduate of Vanderbilt University School of Medicine. Member of Consolidated Medical Assembly of West Tennessee.

new members

The *Journal* takes this opportunity to welcome these new members to the Tennesssee Medical Association.

CAMPBELL COUNTY MEDICAL SOCIETY
David Escalante, M.D., Jellico

CHATTANOOGA-HAMILTON COUNTY MEDICAL SOCIETY
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Richard H. Sadowitz, M.D., Hixson
Samuel Morgan Smith, M.D., Chattanooga

COCKE COUNTY MEDICAL SOCIETY
Anton Christopher Daniel, M.D., Newport

CONSOLIDATED MEDICAL ASSEMBLY OF WEST TENNESSEE
Barton A. Chase, M.D., Ramer

CUMBERLAND COUNTY MEDICAL SOCIETY
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Mary Katherine Gingrass, M.D., Springfield
Lana L. Long, M.D., Nashville
Ronald E. Wilson, M.D., Nashville

HENRY COUNTY MEDICAL SOCIETY
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Michael Edward Green, M.D., Gallatin

WILSON COUNTY MEDICAL SOCIETY
Gary R. Proctor, M.D., Lebanon

personal news

C. DeWayne Knight, M.D., Cleveland, has been certified as a Diplomate of the American Board of Emergency Medicine.

announcements

CALENDAR OF MEETINGS

NATIONAL

May 3-5	American Academy of Facial Plastic and Reconstructive Surgery—Palm Desert, Cal.
May 4-6	Society of General Internal Medicine—Hyatt, San Diego
May 5-7	Christian Medical and Dental Society—Radisson, Denver
May 5-8	American Federation for Clinical Research—

	Hyatt, San Diego
May 5-8	Association of American Physicians—Marriott, San Diego
May 6-8	American College of Radiation Oncology—Hyatt, Washington, D.C.
May 6-10	Society of Cardiovascular Anesthesiologists—Marriott, Philadelphia
May 6-10	Society of Teachers of Family Medicine—Sheraton, New Orleans
May 7-10	Society of Neurological Surgeons—Massachusetts General Hospital, Boston
May 7-11	Aerospace Medical Association—Disneyland, Anaheim, Cal.
May 7-11	Ambulatory Pediatric Association—Convention Center, San Diego
May 7-11	American College of Obstetricians and Gynecologists—Marriott, San Francisco
May 7-13	American Academy of Neurology—Seattle Convention Center & Sheraton
May 8-12	American Pediatric Society—Marriott, San Diego
May 11-14	American Association for the History of Medicine—Holiday Inn, Pittsburgh
May 11-14	American Psychoanalytic Association—Hyatt, Chicago
May 13-19	American Gastrointestinal Association—San Diego
May 14-17	American Group Practice Association—Marriott, Washington D.C.
May 14-17	American Society for Gastrointestinal Endoscopy—San Diego
May 17-21	American College of Cryosurgery—Hyatt, Hilton Head, S.C.
May 17-21	American Society for Dermatologic Surgery—Hyatt, Hilton Head, S.C.
May 17-21	American Society of Head and Neck Radiology—Hilton & Towers, Pittsburgh
May 18	American Society of Contemporary Medicine & Surgery—Drake, Chicago
May 18-21	American Academy of Psychoanalysis—Doral Beach Resort, Miami
May 20-24	American Lung Association—Sheraton, Seattle
May 20-24	American Thoracic Society—Sheraton, Seattle
May 20-25	American Psychiatric Association—Convention Center, Miami Beach
May 21-23	American Trauma Society—Hilton, McLean, Va.
May 21-24	Society for Academic Emergency Medicine—Marriott Rivercenter, San Antonio
May 21-27	American Society of Neuroradiology—Sheraton, Chicago
May 24-27	American Association of Suicidology—Biltmore, Phoenix
May 26-30	American Fracture Association—Caribe Hilton, San Juan, P.R.
May 30-June 3	American Association for Mental Retardation—Hilton, San Francisco
May 31-June 3	American College of Sports Medicine—Minneapolis
June 7-12	American Association of Neuropathology—Hilton del Palacio, San Antonio
June 8-10	Southern Association for Geriatric Medicine—Hyatt Resort, San Antonio
June 8-13	American Diabetes Association—Marriott Marquis, Atlanta
June 11-14	Society for Vascular Surgery—Convention Center, New Orleans.
June 12-15	Society of Nuclear Medicine—Hyatt, Minneapolis
June 14-17	Endocrine Society—Renaissance, Washington, D.C.
June 14-17	Eye Bank Association of America—Hyatt, Hilton Head, S.C.
June 22-25	American Congress of Rehabilitation Medicine—Arlington, Va.
June 23-25	American Association for the Study of Headache—Marriott Copley Place, Boston
June 24-30	Flying Physicians Association—King and Prince Beach Resort, St. Simon Island, Ga.

STATE

May 30-June 4	American Sleep Disorders Association—Opryland Hotel, Nashville
June 15-17	Upper Cumberland Medical Society—Fairfield Glade

TMA Members Receive AMA Physician's Recognition Award

The following TMA members qualified for the AMA Physician's Recognition Award during January 1995. This list, supplied by the AMA, does not include members who reside in other states.

Physicians can receive the PRA certificate valid for one, two, or three years. For the one-year award, physicians report 50 hours of continuing medical education, including 20 hours of Category 1; for the two-year award, physicians report 100 hours of CME, including 40 hours of Category 1; for the three-year award, physicians report 150 hours of CME, 60 of which are Category 1. Each application for the PRA must also verify participation in Category 2 CME activities.

Harvey Asher, M.D., Nashville
Robert J. Gubler, M.D., Johnson City
Sophia J. Hendrick, M.D., Knoxville
Charles I. Huddleston, M.D., Knoxville
William H. Ledbetter, M.D., Nashville
Melvin G. Lewis, M.D., Lewisburg
Walter F. Little III, M.D., Hendersonville
Keith H. Loven, M.D., Madison
Thomas A. Smith, M.D., Winchester
Steven J. Sperring, M.D., Nashville
Glenn E. Wright, M.D., Knoxville

Actions of the Tennessee State Board of Medical Examiners

January, 1995

Name: George H. Collier Jr., M.D. (Paragould, AR)
Violation: Federal felony conviction/disciplinary action taken in Arkansas.
Action: Per agreed order, license placed on probation until 1997.

Name: Joe Walker, M.D. (Water Valley, MS)
Violation: Addiction to drugs/disciplinary action taken in Mississippi.
Action: Per agreed order, license placed on probation for five years.

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2. the sense of coherence, continuity

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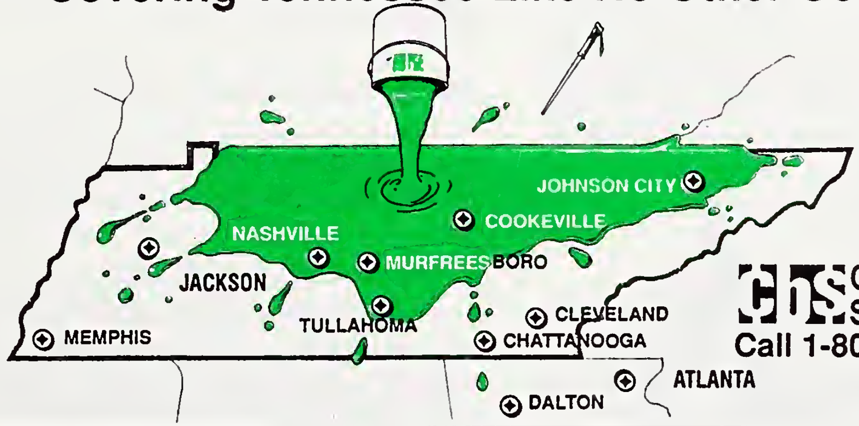

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Highlights of the TMA Board of Trustees Meeting

January 14-15, 1995

The following is a summary of the major actions taken by the Board of Trustees of the Tennessee Medical Association at it regular first quarter meeting in Nashville, January 14-15, 1995. The Board:

Review of Resolutions

Reviewed resolutions adopted in 1988, and adopted positions on whether each should be reaffirmed or be allowed to sunset.

Board for Licensing Health Care Facilities

Agreed to submit the following nominations to the state for consideration of appointment to the Board for Licensing Health Care Facilities: Drs. Charles E. Jordan, Cookeville; Virgil Crowder Jr., Lawrenceburg; Steven Goryl, Cookeville.

Medical Director, Medical Cost Containment Committee

Agreed to submit the following nominations to the state for consideration of appointment as the Medical Director of the Medical Cost Containment Committee: Drs. Roy Harmon, Columbia; Frederick Killeffer, Knoxville; Robert Kirkpatrick, Memphis.

Medical Cost Containment Committee

Recommended to the Commissioner of Labor that Dr. Frederick Killeffer be reappointed to the Medical Cost Containment Committee. Agreed to submit the following nominations to the state for consideration of appointment to the Medical Cost Containment Committee: Drs. George W. Wood II, Memphis; Robert Kirkpatrick, Memphis; Ron Bingham, Lexington.

1995 Budget

Approved the Finance Committee's recommendation for a budget of $2,421,325 in 1995. Recommended that dues, beginning in 1996, be increased by $40 and a resolution be introduced in the House of Delegates. The increase could come from additional dues or reallocation of present earmarked dues.

Nominating Committee

Appointed the following members of the 1995 Nominating Committee representing each grand division: *East Tennessee*—Drs. Robert Overholt, Knoxville; Charles Allen, Johnson City; Sam Williams III, Chattanooga. *Middle Tennessee*—Drs. John Lamb, Nashville; Wendell McAbee, McMinnville; R. Gary Samples, Cookeville. *West Tennessee*—Drs. Hobart Beale, Martin; Charles W. White, Lexington; Jesse C. Woodall Jr., Memphis.

TMA-SEF Board of Directors Appointments

Appointed the following physicians to serve three-year terms on the Board of Directors of the TMA Student Education Fund: Drs. William Hickerson, Memphis; Nat Hyder Jr., Johnson City; Ronald Pack, Knoxville.

IMPACT Board of Directors

Appointed the following members of the IMPACT Board of Directors: Drs. Walter Rose, Chattanooga (3rd Cong. Dist.); Charles Womack III, Cookeville (6th Cong. Dist.); James D. King, Selmer (7th Cong. Dist.). Reconfirmed the following: Drs. David Garriott, Kingsport (1st Cong. Dist.); Robert Montgomery, Knoxville (2nd Cong. Dist.); Fred Ralston Jr., Fayetteville (4th Cong. Dist.) Ralph Wesley, Nashville (5th Cong. Dist.); Michael McAdoo, Milan (8th Cong. Dist.); and Richard Pearson, Memphis (9th Cong. Dist.).

Appointment of Standing and Special Committees

Nominated and approved members to serve on each of the TMA standing and special committees.

Appointment of TMA Annual Meeting Committee

Appointed the following physicians to serve on the TMA Annual Meeting Development Committee: *East Tennessee*—Drs. Robert Bowers, Chattanooga; John Bell, Knoxville; Leonard Brown, Knoxville; Jack Butterworth, Bristol. *Middle Tennessee*—Drs. Virgil Crowder Jr., Lawrenceburg; Richard Lane, Nashville; Ann Price, Nashville. *West Tennessee*—Drs. Neal Beckford, Memphis; Richard Pearson, Memphis; Frank White, Memphis; Hugh Francis III, Memphis.

Board of Medical Examiners

Agreed to submit the following nominations to the state for consideration of appointment to the Board of Medical Examiners: Drs. Elizabeth Pierce, Goodlettsville; Howard Salyer, Nashville; Sam Barnes, Cookeville.

BME's Council on Respiratory Care

Agreed to submit the following nominations to the state for consideration of appointment to the Board of Medical Examiners' Council on Respiratory Care: Drs. Loren Nelson, Nashville; Michael Niedermeyer, Nashville; Thomas Ellis, Jackson.

Distinguished Service Awards

Voted to name Drs. Charles Barnett, Knoxville; E.W. Reed, Memphis; Harold Vann, Clarksville, as recipients of the TMA 1995 Distinguished Service Awards.

Community Service Awards

Voted to name Ms. Janet Brown, Kingsport; Mr. Edward McClarty, Shelbyville; Metropolitan Inter-Faith Association (MIFA), Memphis, as recipients of the TMA 1995 Community Service Awards. ☐

TMA Alliance Report

TMAA's 67th Convention: TMA/TMAA Side-By-Side

We are encouraging our members to hurry to Middle Tennessee for Thursday, April 6 through Saturday, April 8, 1995, where some of the best will be ours as we participate in "Medicine on Stage" with the Tennessee Medical Association and the Tennessee Medical Association Alliance's Side-by-Side Conventions. We are pleased that this year the conventions will be held in exciting downtown Nashville at the AAA-Four Diamond Stouffer Renaissance Nashville Hotel with opportunities for recreation with our spouses as well as learning opportunities for us separately and together. The TMAA Convention will have a different line-up of activities to permit more crossover with the TMA Annual Meeting functions. Our registration, AMA-ERF Silent Auction, and Hospitality rooms will be available at appropriate times throughout the convention. They will be closing on Saturday morning.

The TMAA's 67th Convention will begin Thursday morning with committee meetings with President Vanessa Clark, followed by an afternoon pre-convention board meeting. There will be time for us to briefly attend a TMA reception with our spouses before the "Mad Hatter Dinner," where we are encouraged to wear a hat. Entertainment will be furnished by the W.O. Smith Community Music School Singers. We will have our pictures taken in our hats for a small charge, with profits going to AMA-ERF. (Former nurses take note: your nursing school hat will be perfect. Others may wear a hat of any description.) We are looking forward to helping AMA-ERF at this dinner, as well as to having a good time visiting together. Members of the TMA are welcome to attend with your spouses.

Friday morning we will have an opportunity to attend the TMA's Medicine and Religion Breakfast prior to our Opening Session. A downtown luncheon will honor our past state presidents and current county presidents. Musical entertainment will be provided by nationally acclaimed dulcimer player David Schnaufer who has recently joined the faculty of Vanderbilt University's Blair School of Music. The luncheon will provide an entertaining interlude before we continue with an afternoon General Session. Friday evening the TMAA will host a reception in a member's home to honor our TMAA president and president-elect. Transportation will be provided.

Saturday morning's session will conclude the TMAA's official agenda. Our final General Session with the installation of our officers will begin at 9 AM and will be followed by the post-convention board meeting which will conclude in time for the TMA's IMPACT luncheon.

The TMA has several afternoon activities planned, and you are encouraged to take advantage of any that interest you. One to note is the Personal Development Seminar, "Balancing Lives in the Crowded Theatre of Medicine." Alternatively you might want to take a tour of Music City, walk the two-mile Nashville City Walk tracing the stories of Nashville from past to present, shop at the adjoining Church Street Center, or just take a nap. Saturday night is the TMA President's Reception and the opportunity of a lifetime for you to attend the world famous Ryman Auditorium reserved by the TMA for the evening with a performance of "Always . . . Patsy Cline."

Even though the TMAA's functions officially end on Saturday, Sunday morning's TMA Personal Development Seminar "Medical Marriages: Balancing Commitments to Family & Profession" is open to TMAA members. The weekend holds a plethora of opportunities for personal and professional growth for all members. Those of us planning the events hope that attendance at the TMA and TMAA Conventions will yield a wonderful long weekend of shared experiences. ❑

Mary Lawrence Breinig, Co-Chairman
TMAA's 67th Convention

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TMA continuing medical education opportunities

TMA is accredited by the Accreditation Council for Continuing Medical Education (ACCME) as a sponsor of continuing medical education for physicians. Nonaccredited organizations may request TMA's joint sponsorship of CME activities. As an accredited sponsor, TMA is authorized to designate certain CME activities for credit in the AMA Physician's Recognition Award Program.

TMA is recognized by ACCME as the accreditor of institutions in Tennessee conducting intrastate CME programs. Any organization conducting such programs may apply to TMA for accreditation as a sponsor of CME.

Inquiries regarding TMA joint sponsorship of CME or application for accreditation as a sponsor of CME should be made in writing to: Director of Continuing Medical Education, Tennessee Medical Association, PO Box 120909, Nashville, TN 37212-0909.

IMPORTANT NOTICE

Published in this section are many educational opportunities which come to our attention which might be of interest to our membership. As some of these are very long, full year schedules, and others are detailed descriptions of courses, in order to conserve space, most of them will be published in only one issue of the Journal.

IN TENNESSEE

VANDERBILT UNIVERSITY MEDICAL CENTER

Clinical Training Program

The doctor and faculty plan an individualized program to meet the physician's practice needs. This may include contact with patients, participation in clinical rounds and diagnostic procedures, interaction with faculty and housestaff, access to the Medical Center Library and other learning resources, and other benefits of a preceptorship. AMA/PRA Category 1 credit is provided for each hour of participation. Physicians *must* be licensed and be in active practice with evidence of liability coverage.

Ongoing Rounds and Conferences

Arrangements can be made for licensed practicing physicians to attend for credit.

Special Conferences/Seminars

Detailed brochures for the following courses are available. In some cases, registration numbers are limited.

May 18-19	Advanced/Functional Endoscopic Sinus Surgery Workshop 1995
May 18-21	12th Annual Family Medicine/Primary Care Update
May 19-20	Phono Surgery Tutorial and Hands-On Workshop
May 25-27	19th Annual Sonography Symposium
June 16-17	Laryngeal Endostroboscopy
July 2-6	12th International Congress of Nephrology—Madrid, Spain
July 18-21	18th Annual Contemporary Clinical Neurology Symposium—Hilton Head, S.C.
Aug. 3-4	Advanced/Functional Endoscopic Sinus Surgery 1995
Aug. 12-13	Color Doppler Sonography—Atlanta
Aug. 29	Laser Assisted Uvulo-Palatoplasty: A New Treatment for Snoring

For information contact Division of CME, Vanderbilt University School of Medicine, D-8211 MCN, Nashville, TN 37232, Tel. (615) 322-4030.

MEHARRY MEDICAL COLLEGE

Extended Continuing Education Program

Arrangements have been made with many services and departments in the medical school to allow practicing physicians to participate in the service's activities for a period of one day to one week. This program provides an opportunity for physicians to study in depth for a specified period. The schedule of activities is individualized in response to the physician's request by the participating department. The experience includes conferences, ward rounds, audiovisual materials and contact with patients, residents and faculty.

Fee: $75 per day or $275 per five-day week of educational experience including lunch and parking at Meharry Medical College. *Credit:* AMA Category 1 of the Physician's Recognition Award, AAFP, and Continuing Education Units from Meharry Medical College. *Application:* For information contact Henry A. Moses, Ph.D., Director of Continuing Education, Meharry Medical College, 1005 D.B. Todd Blvd., Nashville, TN 37208, Tel. (615) 327-6235.

UNIVERSITY OF TENNESSEE

Continuing Education Schedule

Memphis

June 1-2	General Surgery Update
Aug. 7-12	Contemporary Issues in Obstetrics and Gynecology—Destin, Fla.
Aug. 23-26	Pulmonary and Critical Care Medicine—Destin, Fla.
Sept. 14-15	27th Conference on the Mother, Fetus, and Newborn

Knoxville

May 4-6	18th Annual Family Practice Update and Review Course—Gatlinburg
June 1-2	11th Annual Alzheimer's Disease Symposium—Gatlinburg
June 13-14	Pediatric Advanced Life Support Provider Course—Gatlinburg
June 15-17	40th Great Smoky Mountains Pediatric Seminar—Gatlinburg
June 22-24	10th Annual Smoky Mountains Infectious Diseases Conference—Gatlinburg
June 28-29	Advanced Cardiac Life Support Provider Course
Sept. 25-27	17th Annual Obstetric Office Ultrasound Workshop

Chattanooga

June 28-July 1	10th Annual Family Medicine Update

For information contact Mrs. Jean Taylor Bryan, Office of CME, University of Tennessee, 800 Madison Ave., Memphis, TN 38163, Tel. (901) 448-5547.

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Communication With Patients: Skills that Enhance Healing

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Introduction

Communication skills become increasingly important for physicians and other health caregivers as patients become better informed about medicine and make choices to direct their care. They seek practitioners who are proficient communicators as well as competent technicians. Many physicians also find that their satisfaction from patient care increases when they communicate effectively. Teaching communication skills has been a central focus in the behavioral and social sciences for decades, and more recently has become part of the core curriculum for medical practitioners as well.[1] Good communication is good medical practice: it is an ethical responsibility to the patient, and it enhances healing.[2]

Korsch and Negrete[3] first used quantitative methods to investigate doctor-patient communication more than 20 years ago. They found that patients' dissatisfaction often arises from doctors' use of jargon and failure to listen to their concerns. Doctors, in turn, are frustrated by the noncompliance of patients and frequently seek to maintain their social distance (and thereby, their authority).

Our interest in communication skills arose from firsthand experiences two of us (AWZ and LNZ) had as patients receiving medical care and from teaching these techniques (NNB and DST) in our training programs. We presented this material in grand rounds at the University of Tennessee Medical Center at Knoxville and East Tennessee Children's Hospital. Medical and nursing staffs responded positively and shared their wide range of experiences. Here we will discuss basic communication skills for medical training and continuing medical education and their importance for healing. We present seven practical pointers, based on our personal experiences in medical practice, social work, and nursing—and recently—as patients.

The Process

Communication is a process for exchanging information among individuals through a common system of symbols, signs, or behavior. Modes of transmission can be oral, written, or (perhaps most importantly) nonverbal. All forms of communication (including electronic media) can be effective if all parties have the opportunity to respond and clarify the information. By developing their communication skills, physicians and all caregivers

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From the Knoxville Neurology Clinic, East Tennessee Children's Hospital, and Departments of Pediatrics, Obstetrics and Gynecology, and Family Medicine, University of Tennessee Medical Center at Knoxville.

Reprint requests to Kennedy Krieger Institute, 707 N. Broadway, Baltimore, MD 21205 (Dr. Zimmerman).

can enhance patient satisfaction, compliance, and outcomes.[4]

The physician and patient develop knowledge together by sharing medical facts and issues. Data need to be complete for a correct differential diagnosis, and interviewing skills are essential.[5] A correct diagnosis—and therefore, appropriate therapy—requires that the patient-physician relationship be based on sensitivity and trust so that both can share information adequately. The importance of communication in the patient-physician relationship cannot be overemphasized. Good communication not only leads patients to comply with the physician's advice; it also improves their perception of the physician's competence and sensitivity.

To be effective, communication must take place at the *patient's* developmental level. This requires that the physician assess the patient's coping abilities, level of understanding, and intellectual and emotional awareness when sharing information and recommendations. Skillful communicators learn to do this without condescension. They convey a sincere desire to exchange information in order to care for the patient.

Communicate or Litigate

It is increasingly evident that there is a relationship between failed communication and lawsuits. Even in the event of "bad outcomes," patients are less likely to file malpractice lawsuits if they perceive that there has been good communication, which includes the sharing of empathy and concern by the physician. To illustrate this point, Melvin Belli[6] points out that instances occur in which patients have suffered harm or perceived they have, but after review there was little to document these claims. It would seem in these instances that either a lack of communication or a false perception by the physician or the patient—and not malpractice—is the problem.

The connection between failure of physician-patient or nurse-patient communication and malpractice lawsuits has become a primary concern to malpractice insurers, who are offering seminars for improving physicians' communication skills. In return, some (such as SVMIC) offer reduced premiums as incentives to participate. However, the threat of litigation and even compulsory didactic demonstrations do not replace the need for basic sensitivity to the importance of communication in working with patients. A physician's or nurse's personal experiences as a patient can also increase the appreciation for effective communication, which was well demonstrated in the recent Touchstone Pictures film, *The Doctor*, starring William Hurt. The following recounts these effects on two of us.

Background: Personal Experiences

The year 1992 presented many challenges. At age 48 AWZ had two surgical operations for avascular necrosis of the hips, and spent the year on crutches. LNZ had breast cancer, with four operations and chemotherapy. Through the year we learned to think positively and support each other. We grew in our relationship and healed together as many couples do during serious illnesses. We drew strength from our friends, family, and church. Thankfully, we are both well again and are grateful for our first-rate medical care—and good communication with our caregivers.

Early in the year we saw that communication with each other—based on love and understanding—was the key, not just to survival, but to a positive outlook and recovery. As an intensive care nurse, LNZ knew the importance of nonverbal communication skills and family support. In his practice as a pediatric neurologist, AWZ had helped patients and families to cope with many types of acute and chronic disorders. But we were not prepared for the new awareness we were about to gain "from the other side" as patients: that *effective communication is the most important element of healing.*

At first we thought we might be able to predict certain "types" of communicators by styles, language, or age. We soon learned that some of the best were the least predictable. Of course there were the first year orthopedic residents on morning rounds who addressed my leg: "How are *we* this morning?" There were also experienced physicians who did not hesitate to deliver bad news with arms crossed, standing in a busy hallway (as a routine), and failing to make eye contact during the process. Frequently communication skills were not commensurate with the knowledge or technical skills *we knew* (by reputation) the physician or nurse possessed. Conversely, some were highly skilled communicators: the chief surgeon and oncologist (as expected), several anesthesiologists (these we did not anticipate), as well as several nurses (who were often our main sources of information) and paramedical persons.

Communication and Healing

In western tradition, healing has focused on physical cure, but our experiences made us aware that thought and emotion strongly influence the body's ability to heal. The definition of healing—*becoming whole, sound; restoration of vitality*—implies more than freedom from disease. Patients' emotional, spiritual, and physical belief systems can greatly influence the course of their illnesses. This was well illustrated in the recent book and television series, *Healing and the Mind* by Bill Moyers,[7] which documented a variety of widespread cultural and spiritual practices and their effects on wellness.

Healing is not curing. Many of us feel a responsibility to repair or restore our patients to physical health, even though this may be unrealistic or impossible in the context of chronic or terminal illnesses. Healing requires that we consider patients' emotional and spiritual needs together with the purely clinical aspects of their diseases. Dossey[8] suggests that in addition to physical examinations and laboratory tests, discerning what patients believe about their health may play a role in who lives and who dies. The meaning that a patient attaches to his disease (and to life in general) will affect the outcome.

The ways in which health providers communicate with patients and their families can have positive or negative effects in shaping patients' attitudes toward their illnesses. Just as uncertainty and fear can magnify pain, we feel that knowledge and hope can speed recovery. Cultivating the art of healing requires our treating the individual with respect and sensitivity. Providing information, reassurance and hope, and encouraging a patient-active role, enhances one's ability to develop a positive attitude and thereby improve his quality of life. This, in turn, gives the patient power to use natural resources available to him to aid the physician in the healing process. According to Cousins,[9] "The wise physician doesn't minimize the seriousness of the illness; he presents . . . a plan . . . in which the patient has an active role."

Feeling a sense of *empowerment* was crucial to our recoveries. That is to say, good communication gave us the power to feel that we were active players on our medical teams, and enhanced our healing. It decreased our stress, enabled us to cope, and increased our confidence and hope. As a result we were able to deal with multiple surgical procedures and chemotherapy with grace and humor.

Basic Skills

The doctor-patient relationship is central to the practice of medicine. Communication skills are the key to the establishment of that relationship. The ability to "connect" with patients is enhanced by five relational skills: *reflection, legitimation, support, partnership, and respect.*[5]

Patients come to their physicians with their own ways of viewing themselves as well as their own reasons for seeking medical care. Their ability to participate in therapeutic relationships depends on their ability to trust, the rationality of their fears about their physical condition and how it might affect their lives, and their expectations about their interactions with their caregivers. Skilled physicians make good initial impressions on patients by assuring them through effective communication (both verbal and nonverbal) that they can be trusted to help them deal with their fears and emotional needs as well as their medical problems.

A good start is to greet the patient with a touch or handshake, make eye contact, introduce yourself, and call the patient by name. This sets a warm and reassuring tone for the patient to naturally assume that he will be heard. In pediatrics, include the child in introductions and all conversations as much as possible. Wear a name tag for new patients in the office, clinic, or hospital.

Begin the interview with an open-ended question to give the patient an opportunity to tell his story. "What brings you here today?" Physicians express fear that this approach will open up the interview to emotions and will require more time. Branch and Malik[10] found that listening to personal, emotional, or family concerns from one to seven minutes gave them a "window of opportunity" to connect with the patient without increasing the overall time. It is also a way to show *respect*, offer support, and begin to develop a *partnership* with the patient. An effective physician-patient partnership increases compliance[11] and enhances healing.[12] Satisfaction increases for both patients and physicians, and there are fewer angry patients and lawsuits.[13]

Emotions displayed early in the interview stem from patients' fears and expectations. Listen to the patient and watch for nonverbal cues. Once you hear his reason for coming, *reflect* your understanding back to the patient. This will allow you to focus the interview using closed-ended questions to collect the data you need to determine the problem. It also serves to *legitimate* the patients' emotional reactions to their reasons for seeing the physician and will strengthen the partnership.

Use clear, concise, nonmedical statements to tell the patient what you find, what tests, treatments, or medications may be needed, and what you think will happen. Address patients' fears by asking, "What do you think might happen?" Teach patients about what to expect for their tests or treatments, and about the medications you prescribe. This allays fears and increases patient participation. As patients increase their understanding, they develop respect and are free to participate in developing treatment plans.

As you develop the treatment plan in partnership with the patient, reflect back what was heard, and clarify when required to assure understanding. Use open-ended questions and reflective listening to set goals, finalize the treatment regimen, and detail expectations of self-monitoring activities.

Conclude the interview by summarizing the treatment regimen, make supportive statements, and define what you expect to happen and when you want the patient to return. Shake hands or touch the patient on the arm or shoulder.

Practical Pointers

The art of medicine allows its practitioners the opportunity (if not the obligation) to apply their knowledge directly and with lasting effects on patients' lives. Personal satisfaction with this *connectedness* (or relatedness with patients) grows over time, but this depends on caregivers' willingness to develop the necessary skills. The ability to communicate effectively appears to develop at different stages and rates among individuals. Through personal experience we compiled the following seven recommendations for good communication:

1. *Be secure in yourself and your knowledge.* Being unsure or anxious often interferes with good eye contact and nonverbal cues. It is acceptable to say, "I don't know," in the context of a trusting relationship.

2. Patients' perception of the time the physician spends with them (as well as concern for them) increases when the physician *sits down* (however briefly), *makes eye contact,* and *touches reassuringly.*

3. Put the *patients first* and give them a chance to express their concerns and fears. Those patients who are unfamiliar with the "medical system" tend to be passive in communicating their needs. They need permission to ask for help, e.g., one can say, *"Tell me if I'm not clear."*

4. Speak slowly and in plain English. Patients are not impressed by academic subtleties, jargon, or *"medspeak,"* and often rely on nurses and clinical social workers to interpret what they heard (or can remember afterwards). *Reflective listening* (clarifying discourse) increases patient satisfaction and compliance.

5. Always speak the truth, *in portions requested by the patient.* It is often helpful to reveal information stepwise (even in a single session) as patients prepare themselves to request and then accept it. This gives the patient and family *control* in a setting in which they feel powerless. This is especially important when breaking bad news.[14]

6. Try to understand the patients' individual *thought processes and emotional states* as well as you understand the disease. If the physician, nurse, or other caregivers accept responsibility for care of the patient *as a person* (not just an organism with a disease), they must consider these as critical ingredients in the healing process. Once integrated into the patient's care, they can become as useful and interesting as the science of the disease process itself.

7. *Reassure the patient and family.* This engenders hope, no matter how severe the illness. Reassurance allays anxiety, opens communication, and reflects the caregiver's basic love for humanity.

Conclusion

Communication skills are essential for physicians and all caregivers to become fully effective in the art of medicine and healing. We have experienced a need to emphasize the teaching of communication that extends to all areas and levels of medical education. The quality of patient care ultimately depends on caregivers who recognize the importance of effective communication and are willing to develop and practice these skills. ❑

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The Changing Incidence of Retinopathy of Prematurity

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Introduction

The care of premature infants is an evolving activity at the juncture between basic scientific research and standardized clinical practice. Recently, dramatic improvements in the survival rates of premature infants have developed.[1-3] For this reason, there was concern that increased patient survival would result in larger numbers of individuals at risk for retinopathy of prematurity and blindness.[1-5] The Vanderbilt University Medical Center (VUMC) has been involved in retinopathy of prematurity (ROP) investigations since 1968[2,4-6] and represents a unique resource for the investigation of this relationship.

New classification schemes for ROP became popular in 1984,[7] and in 1987.[8] However, these schemes involved no new anatomic pathologic descriptions. Except for some minor changes in the names of retinal areas these "new" classification schemes were identical to those in use at VUMC since 1978. Since the original ophthalmic investigators were available, this data collection permitted a unique opportunity to examine the changing incidence of ROP.

Patients and Methods

There has been an institution-wide interest in premature infants for many years at VUMC. For over 30 years there have therefore been detailed eye examinations on all newborn children with birthweights under 2,000 gm. In this report, we compare two groups of premature infants born at VUMC; the first group were born between July 1, 1981 and June 30, 1982, and the second between July 1, 1991 and June 30, 1992. These specific years were chosen because they represent an equal period of time (five years) before and after the report of the nationwide Cryotherapy for ROP (CRYO-ROP) study (1986). For the purposes of this report, the patient records were collated into comparative groups by birthweights (less than 750 gm, 750 to 999 gm, 1,000 to 1,249 gm, 1,250 to 1,500 gm).

Although the survival rates for all infants improved during the 30 years in which eye examinations were performed, many children have had significant systemic disorders. Some have succumbed from coexisting medical disorders, while others have not been able to live outside of an institutional environment. To establish a basic similarity in our populations in terms of overall health and well-being, the data in this report are restricted to those infants able to survive at home with their families for six months or more after hospital discharge.

The initial examinations were performed within six weeks of birth, at a time when the neonatologists believed that the children were well enough to withstand them. Each retina was examined by an ophthalmologist who had received special training in neonatal retinal evaluations, and a report, which often included detailed diagrams of each patient's retinal vasculature, was recorded. After the initial data collection, repeated retinal examinations were performed at two-week intervals, or more frequently if indicated, until either (1) full retinal vascular maturity, (2) the eye had had some type of ocular surgical procedure, or (3) the eye had developed irreversible anatomic changes and was blind. In this report, the term "blind" is used to describe an eye that had either a "macula off" retinal detachment, or a retinal fold through the center of the fovea. When the term "blind" is used to describe a patient, each eye of the patient was "blind." Tests of statistically significant differences between these populations were made using chi-square analysis.

Results

Between July 1, 1981 and June 30, 1982, there were 137 infants with birthweights of 1,500 gm or less who satisfied the inclusion criteria for this

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TABLE 1

INCIDENCE OF ROP/PATIENT CHARACTERISTICS

Group	1982	1992
All Patients	137	154
# with ROP	27	26
# Blind*	6	1
INCIDENCE OF ROP	0.197	0.169

*For blindness, $P<0.05$.

TABLE 2

PATIENT CHARACTERISTICS BY BIRTHWEIGHTS

Group	1982	1992
Less than 750 gm	9	16
# with ROP	3	10
# Blind	1	1
INCIDENCE OF ROP	0.333	0.625
750 to 999 gm	25	38
# with ROP	10	15
# Blind*	3	0
INCIDENCE OF ROP	0.400	0.395
1,000 to 1,249 gm	42	40
# with ROP**	12	1
# Blind	2	0
INCIDENCE OF ROP**	0.286	0.025
1,250 to 1,500 gm	57	60
# with ROP	2	0
# Blind	0	0
INCIDENCE OF ROP	0.035	0.000

*$P<0.05$; **$P<0.01$

study. Ten years later, from July 1, 1991 to June 30, 1992, 154 infants had similar characteristics (Table 1). In the 1982 group, 27 infants (20%) had evidence of some aspect of ROP. In 1992, 26 (16%) did; this difference was not statistically significant. Only a small group of eyes with ROP became blind. In 1982, six infants became blind from ROP, and in 1992 only one child (with a birthweight of 630 gm) did. This is a significant reduction in blindness rates ($P<0.05$).

The analysis by birthweight categories is reported in detail in Table 2, the most relevant features of which are the following. In the birthweight group of 750 to 999 gm, 12% became blind in 1982, and none became blind in 1992 ($P<0.05$). In the birthweight group of 1,000 to 1,249 gm, ROP was identified in 12 (29%) in 1982, but caused blindness in only two (5%), whereas in 1992, only one child had any form of ROP, and this resulted in no visual impairment. This represents a significant reduction in the incidence of ROP ($P<0.01$).

Discussion

In the recent past, there was concern about a resurgence of blindness from ROP as the survival rates of premature infants increased.[9,10] Multiple concurrent modifications in the therapy of low birthweight infants influenced this survival rate change, and each one may have had a different effect on ROP. A preliminary overview of our data implied that this caused just a slight reduction in the actual numbers of infants with clinical evidence of ROP. That does not, however, give a true picture of the changes that occurred in the decade between 1982 and 1992, when there was a great increase in the survival rates of all low birthweight infants.[1] Even with this increase in survival, there was no increased incidence of ROP in these children. At the same time, the development of ophthalmic therapy has decreased the blindness rates from ROP for all children; in our population, this resulted in a reduction in blindness from 4.4% to 0.6% ($P<0.05$).

At VUMC, the number of new low birth- weight infants with ROP in 1992 was much lower than expected. The CRYO-ROP Cooperative Research Group reported data that represented a sample of 15% of all low birthweight infants born in the United States.[11] Since VUMC had been a part of the CRYO-ROP study, and 10% of the total CRYO-ROP study population were Vanderbilt patients, it was expected that the VUMC data would parallel that report. However, just a few years after the CRYO-ROP report[11] had found some form of ROP in 66% of all infants with birthweights under 1,250 gm, ROP was found in only 26 (28%) of 94 similar infants examined at Vanderbilt. As one explanation of this difference, it is important to note that the inclusion characteristics of the populations in the CRYO-ROP study and this Vanderbilt study are somewhat different. Nevertheless, even with this understanding, it was a surprise to find this change.

All of our ophthalmic investigators (SSF, DAJ, JHE) have had a great deal of experience in examining infants for ROP. In addition, each ophthalmic investigator has been measured, tested, and approved by the CRYO-ROP Cooperative Group to be a retinal examiner for the CRYO-ROP studies.[12,13] For this reason, it is unlikely that many infants with ROP were missed at Vanderbilt. Instead, there appears to have been a reduction in the incidence of low birthweight infants with ROP at this institution. Whether or not this is related to the introduction of the use of surfactant, a treatment reported to increase survival, is not known.[1,2]

Surfactant has had a significant effect on infant mortality in this country. Surfactant therapy has been estimated to be responsible for at least half of the reduction in the neonatal death rate from 9.7 to 9.1 deaths per 1,000 births.[1] This effect is even more pronounced in the high-risk population. In infants with birthweights between 601 and 1,300 gm, the mortality rate has dropped from 28% to 20%, with an odds ratio of 0.64 (95% Confidence Interval 0.55-0.75).[1,2] At VUMC, the mortality rate for infants with birthweights under 1,500 gm has steadily declined in the last decade. This has changed from 18.3% in the 1981-1985 era, to 15.9% in the 1986-1990 era, to 10.4% in 1992. This decline has occurred despite the finding that there has been a decreasing gestational age and mean birthweight over the same period.[1,2]

During this same time interval, cryotherapy treatment for ROP has become a standardized clinical practice.[6] As a result, the risk of blindness has become reduced by more than 50%. More recently, the use of the indirect ophthalmoscopic laser has developed into a technique that appears to be equally effective, and associated with fewer patient risks.[14,15]

These data from VUMC have shown that changes in neonatal therapy resulted in the survival of many more low birthweight infants at risk for ROP. This systemic therapeutic benefit had the potential to produce greater numbers of blind infants. Concomitant developments in ocular treatment, however, resulted in fewer infants having visual loss. ❑

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Special Communication

Transitions in Health Care

JOHN P. ROBINSON, Ph.D.

For many years I had a physician named "Charlie." When I or a member of my family needed medical attention he was immediately available in person. It is probably significant to say at this point that Charlie and I were both faculty members at the same medical school in Nashville. We were both professionally interested in and often discussed various areas of biomedical research.

I learned long ago that Charlie is considered by those "in the know" to be one of Nashville's best physicians. He is often referred to among the faculty members of the medical school as the "ideal physician." For many years I have lived with the security and comfort that Nashville's best medical care was available to my family if the need arose. During the course of raising two children I have for various reasons and on several occasions needed to call upon my family doctor. He was always there until recently, when we both retired.

I find it rather odd that after over three decades of participation in the training of physicians that I am just now becoming aware of those difficulties that people encounter when they begin searching for a good physician. I now know firsthand why Charlie has for so long been held in such high esteem. When I saw him as a patient he had that convincing gift of giving me his undivided attention, and although these visits were brief, he never appeared to be in a hurry. I do not remember his ever letting me leave his presence until all of my questions were answered to my satisfaction. He let me feel that I was the one ready to terminate the visit. I say this with the knowledge that all patients cannot be treated alike, and some patients would talk all day. Charlie's demeanor projected his understanding and concern, and when I left his office, one way or another I felt better.

Now my family has scattered the way families do when the children grow up and move away. Charlie, at 66 years of age, having excellent mental faculties and in good physical condition, has retired. Now I have to find another doctor.

Like everyone else I have had and continue to have nuisance health problems that could become serious if neglected. I therefore need a doctor to keep track of the general condition of my health and to take care of these minor health problems. I became acutely aware of this need recently when I developed a problem that needed immediate attention, and realized that I had no one to go to. A visit to the emergency room to be seen by strangers at exaggerated prices is not a good way to solve such problems. I became serious and decided that it was time that I found a physician and got a physical examination.

I selected a physician based on what I considered good references, and made an appointment. I soon learned that I would be seen by his nurse practitioner due to his heavy schedule. I kept the appointment, which I had announced was for the purpose of getting a routine physical examination, besides a dermatology problem that I wanted them to look at. I was interviewed by the nurse practitioner; that is, she took my medical history. Below her attractive, intelligent face was the long white coat and the outward appearance of a physician practicing medicine. The history-taking progressed rather smoothly until I attempted to show her the skin problem. Altogether too briefly she observed the lesions from a distance of some six to eight feet, and made the confident comment that it was the same seborrheic dermatitis expressing itself in the center of my chest. I am no clinician, but I did not believe her, and I also believe that no diagnosis of a skin lesion is made from that distance at scarcely more than a glance.

I could not help making comparisons with what I had been accustomed to. I was fully clothed to the waist throughout the visit, so a significant part of my body was not examined at all. I suppose this could be a gender problem. It was also my judgement that this young lady with her attractive and confident exterior wanted to be accepted as a physician, even though she is a nurse. Whenever she is in the slightest doubt she should refer to the physician in charge.

Although it has been quite a number of years since I did so, I once taught student nurses, and when I compare what we taught nursing students with what we taught medical students, the gap is very wide. I do not feel comfortable with nurses assuming a diagnostic roll in the practice of medicine. They are simply not qualified. They do not have the concept of human biology, pathology, or pharmacology that a physician has, and that many of them do not seem to recognize these limitations in themselves is itself unnerving. This intrusion of nurses into diagnostic medicine can be blamed squarely on the physicians themselves. They left too many people without seeing a doctor. I made a mental note to see a dermatologist.

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My dermatologist had retired even before Charlie or I. I would have to find another one. I called in to a local hospital and got the name of a dermatologist whose office was close to my home. I made an appointment with him, and upon arrival I thought him pleasant and competent. I did not use a stopwatch, but probably inside of five minutes he developed an overpowering urgency to get to his next patient. He had immediately recognized the areas that I was concerned about and began treatment, which consisted of freezing the lesions. He demonstrated the procedure to his assistant on one of the areas, and in his whirlwind manner left to see his next patient.

The assistant continued in his absence what the dermatologist had started. This consisted of freezing those areas he indicated to her using liquid nitrogen. It is a very simple procedure, which I and my fellow workers often used in my laboratory, where liquid nitrogen was readily available, to remove warts. The assistant was entirely too hesitant with the nitrogen. I could not see most of the places where she was working, but I could detect, through lack of sensation, that she was not properly freezing those areas. I left when she said that she was finished, and went home. About four days later, with the aid of mirrors, I could tell that only one area had been properly frozen, and that was the one the dermatologist used to demonstrate the procedure.

I had been disappointed for the second time, and I could not help feeling that I had two examples of something less than what I considered acceptable in the practice of medicine. By the standards I was accustomed to this was discouraging. I called the dermatologist's office and told the receptionist that these areas had not been properly treated and was told that, "sometimes it took two treatments." This answer might satisfy most people, but I am well aware that if it were done properly on the first visit the second is not only unnecessary, it is an inexcusable inconvenience and expense.

I made a second appointment to see the dermatologist. This time I was lucky. I made the appointment as early on Monday morning as I could. I wanted to be his first patient. Fortunately, snow was falling, schools were closed, and not much traffic was moving. The dermatologist was there alone with no patients waiting, and I had his undivided and careful attention for some 30 or 40 minutes. I got a close and thorough examination and treatment, and more important, he realized, and stated, that the previous treatment was not properly done. He should have seen to it that the freezing was done right in the first effort. We even began to get acquainted. I think that he is a capable, concerned physician, and in too much of a hurry—to do what? My guess is that on some days it is to make money for some reason or reasons.

During this same period, while I was shopping for a personal physician, I had one other reason for contact with physicians practicing their art. This was the brief illness and death of my aged mother. Her physician was so frantically busy that his conduct, although probably not intended to be, was actually rude. It is my belief that the hand-holding that physicians do for survivors during the death of a family member is a significant and important part of their role. I am aware that not all physicians are particularly good at this.

This sequence of experiences left me with the feeling that something important in the physician-patient and family relationship is lacking. This particular physician was in entirely too much of a hurry, too distant and too impersonal about the death of his patient. Perhaps it is no longer realistic for patients and survivors to look for this caring and personal relationship with their doctor. It appears to me that in our fast paced society this special, very private and personal patient-family-physician relationship to which I am accustomed is being compromised. If so, this is in my opinion another regrettable, dehumanizing element of current socioeconomic change.

I believe strongly that the practice of medicine is an art. Science has had and will continue to have dramatic impact upon advances in medicine, but it has a long way to go before we can say that the practice of medicine is an exact science. When that day comes we can turn the whole business over to machines.

Good quality in the practice of medicine requires extensive training, demanding years of study both in school and on the job, in order for the skilled physician to begin independently practicing the art. Only such skilled people should even pretend to practice medicine. If less qualified people are allowed to make independent diagnostic decisions and prescribe medication we will inevitably suffer a loss in the quality of health care delivery. I fear that such changes are now taking place.

When I was 12 years old my father had a heart attack early one evening. Where we lived there was no hospital. Family members did not know what was wrong, and we were apprehensive and frightened. When old Dr. Beasley showed up in his black coupe carrying his black bag I well remember the reassurance and comfort that I experienced in just knowing that he was there and in the hope that he could make everything all right. Dr. Beasley stayed for several hours that evening at our house, taking care of my father using the contents of his black bag. He probably used nothing more than nitroglycerin, but Dr. Beasley also brought himself to our house on that evening. His presence included his friendship, empathy, and genuine concern for my father and his family. We trusted him completely, and we felt comfort and security from the knowledge that we had the best medical care that was available. A house call like that in 1939 in rural middle Tennessee was probably worth three dollars, and that was not a trivial sum.

My father recovered. He was sitting up several days later and answered the door when a local character named Jap called. The rumor had circulated within the community that my father had died, and Jap had come to sell the family a tombstone for my father's grave. Jap was surprised to see my father at the door but being a persistent man who sold things, he then attempted to sell my father a bible. Good old Jap.

Now, in the 1990s, our whole social and economic structure has changed. Among these changes is of course how we go about getting medical care. Where I grew up people usually lived, endured sickness, and died in their own homes. My grandmother died of pneumonia "the friend of the aged" in 1935 in our house in her bed attended by her physician. People paid for their medical care themselves, without any help or concern from the government. Such a concept of government involvement in health care did not exist at that time and place, but that would change. Medical care was much more economical, even manageable, under those conditions. When people were able they went to see the doctor in his office for their ailments. When they were sick or disabled, the doctor came to their home.

With the proper use of modern technology my father would probably have recovered from his heart attack and returned to work sooner. The cost for such medical care however would have been considerably more than three dollars, and without medical insurance it would have been threatening to the economic security of our family. The billing process from old Dr. Beasley would have been clear, simple, and orally transmitted directly to the patient or family member. The billing process in the modern business-run system would defy interpretation or understanding in either its content or magnitude. The billing would continue in a confusing, disconnected stream of bills and "non-bills" for months, even years, and if one took those computers seriously, it could in some patients contribute to another illness.

It could be said that in our modern society we must first get permission from the insurance company or the government, for Medicaid approval, before we can afford to have a serious illness. Otherwise we might not be able to pay for it. My facetious nature leads me to wonder who discusses these matters with mother nature.

The trend now is that health care delivery is being economically driven towards HMO-type health care systems. Such systems appear to be the most effective in keeping costs down, and they will do some other things as well. They will provide a limited but hopefully sometimes adequate number of physicians available to the individual. The physicians themselves are employed by the company, and the company places itself economically and very firmly between the physician and patient. The company controls and can even terminate the physician-patient relationship. The company is in charge, and the company must make a profit.

We have made impressive advances in medical care, and we live longer, healthier lives. If we ask ourselves whether we are getting better health care now than in 1939, the answer is obviously, yes. If we ask ourselves are we putting our best efforts into health care delivery, the answer is no. Since the system must now first and foremost generate a profit in order for the system to work, the physician is in a subordinate position, and our best effort has necessarily been compromised. I suspect that rather than correct this failure to make our best effort, we will simply redefine, within the terms of the system, what our best effort is. In the future, quality in health care delivery, if we allow it, will be largely influenced by whatever "good" business practice tolerates.

I felt very good about the medical care that was available to my family and me as long Charlie was practicing medicine. I felt every bit as good about it as we did about having old Dr. Beasley looking after us in the 1930s. I must find another doctor, and I want that person to be a good physician. I suppose that I also want to get to know something about that person. I fear that I want more than the present system and more importantly most of the physicians themselves will or even can give. A physician who practiced medicine with the time, dedication, and support to the patient that Charlie did would not likely for economic reasons be held in high esteem by the present system.

If one grows up as a patient under these conditions, then he is less likely to find fault with them, and future generations are less likely than members of my generation to resent the system. The concept of how a physician practices the art in this subordinate position will become the norm, and it is likely that a different kind of person will be attracted into training for the practice of medicine. Needless to say, these new physicians are not very likely to be people who are motivated to practice medicine the way that old Dr. Beasley or Charlie did.

No matter how good we become at prolonging good health—and we are making impressive progress all of the time—every individual among us will eventually experience serious health problems and death. An important question that each of us might well ask ourselves could be, just who or what will our attending physician be working for and concerned about in that eventual crisis.

Some of us will be fortunate and die quickly and therefore both mercifully and economically. Others of us will linger, and, since lingering is becoming a particularly lucrative event, generating enormous medical expenses. As that fraction of us lingers, unable to help ourselves and essentially at the mercy of, first, those medical professionals in attendance, and ultimately of invisible persons somewhere in an insurance company or government office, if our mental state allows, how will we feel about those attending us? Will we know them? Not likely. Is it important? For some of us probably not. Will we die any more comfortably with the assistance of that expensive technology than my grandmother did in 1935? I suspect not. Death is most likely six of one and half dozen of the other with regard to how we actually make our exit. The concept of how we should die will be generated in the young people of today quite differently from that of the older people who are emotionally anchored to the events experienced in the past. Also, the use of morphine and the human body's merciful ability to go into coma have been around for a long time. I suspect that in our modern society we will die with almost as much discomfort as my grandmother did and at considerably greater expense. ❑

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“Cold, Cold Heart”: A Case of Severe Hypothermia

Case Report

A 66-year–old man with a history of ethanol abuse and withdrawal was found unresponsive on the sidewalk at 5 AM on a January morning. The emergency medical service arrived to find that the patient had a body temperature of 77°F.

The blood pressure initially was 119/79 mm Hg with a pulse of 60/min and shallow respirations at 28/min. There was no evidence of external trauma, and his skin was cool and dry. He was motionless and unresponsive to sternal rub. He had pinpoint pupils, with spontaneous circular eye movements. Examination of the thorax revealed bilateral, clear breath sounds and an irregularly irregular heart beat without murmurs, rubs, or gallops. His abdomen was soft, with hypoactive bowel sounds. No deep tendon reflexes or clonus were elicited. The Babinski test was normal bilaterally.

As he was being transported to the Vanderbilt University Medical Center emergency room, he became hypotensive and bradycardic, and was intubated and treated with intravenous fluids. In the initial assessment, physicians found him still to be unresponsive, hypotensive, and bradycardic. Electrocardiogram revealed atrial fibrillation with a slow ventricular rate and prominent Osborn waves (Fig. 1). Arterial blood gas analysis revealed pH 7.2, $P\text{CO}_2$ 53 mm Hg, $P\text{O}_2$ 52 mm Hg. Other laboratory studies showed a profound hypokalemia, mild hypomagnesemia and hypocalcemia, a serum bicarbonate of 15 mEq/dl with normal anion, and (ethanol corrected) osmolar gaps. His blood ethanol level was 420 mg/dl. He also had a mild macrocytic anemia. Chest x–ray, urinalysis, and thyroid stimulating hormone levels were all normal.

He was treated with heated air ventilation, continuous cycle peritoneal lavage (fluid temperature 105–109°F), and warm intravenous fluids. His body temperature increased approximately one to two degrees per hour in this manner, and his hemodynamic and neurologic status improved greatly as he approached euthermia. By the end of the first hospital day, he was attempting to converse around his endotracheal tube.

As the patient recovered over the next few days, he suffered no rhabdomyolysis, pancreatitis, hemorrhage, renal insufficiency, or serious arrhythmias. Subsequent electrocardiogram became normal (Fig. 2), as did minor electrolyte abnormalities. A CT scan of his head was normal. He was extubated on the second hospital day. After several days of observation, the patient was discharged from the hospital without notable complications from severe hypothermia.

Discussion

Hypothermia is unfortunately a common and potentially life-threatening condition. Those who are particularly prone to severe hypothermia include the elderly, the homeless, and alcohol and drug abusers. During the winter months, however, anyone may be at risk for hypothermia with prolonged exposure to cold due to outdoor sports, cold water immersion, or trauma.

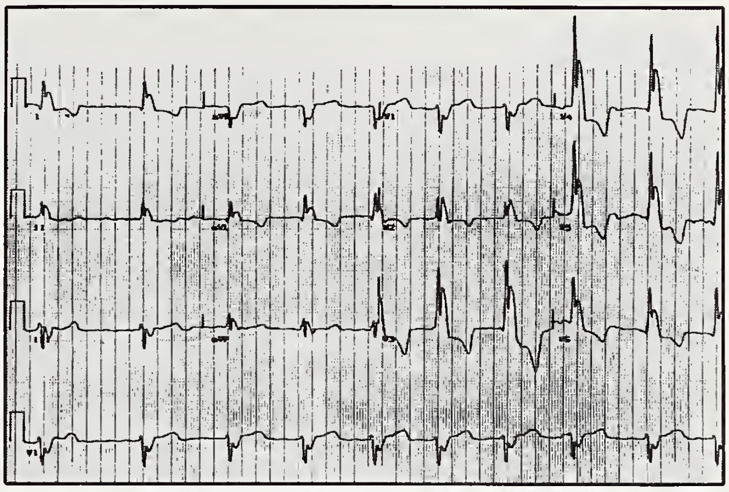

Figure 1. “Osborn” waves and slow atrial fibrillation were present on this patient’s initial EKG during severe hypothermia.

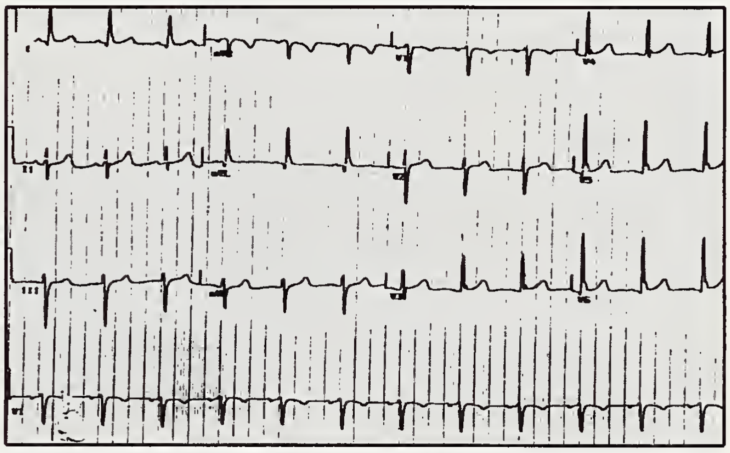

Figure 2. Resolution of baseline EKG findings occurred one day after rewarming and correction of minor electrolyte abnormalities.

Caution must be taken in the diagnosis of hypothermia, as many thermometers do not record accurate temperatures below 94°F. Also, clinical signs vary with the degree of hypothermia. These may include subtle confusion, lethargy, and shivering. As the body temperature continues to fall, coma and hemodynamic instability can occur.[1,2]

Though the obvious goal in the treatment of hypothermia is to warm the patient, some rewarming strategies actually increase the incidence of an untoward outcome. For example, in severely hypothermic patients, vigorous external rewarming can actually cause a patient’s core temperature to fall, a phenomenon called “afterdrop.” As the skin and extremities are warmed and peripheral vasoconstriction is relieved, as

(Continued on page 192)

Presented by Jim N. Jirjis, M.D., medical resident, Vanderbilt University Medical Center, and J. Andrew Alspaugh, M.D., medical resident, Nashville Veterans Administration Medical Center.

An Accidental Self-Inflicted Gunshot Wound

SCOTT COPELAND, M.D. and JAMES V. LEWIS, M.D.

Introduction

Firearm injuries in the United States have been the subject of multiple recent reports in the medical literature. These reports range from those dealing with the general topic of guns as a cause of death to those describing suicide with firearms. Accidental injury to children and adolescents from guns has often been a separate topic of reporting.[1,2] The fact that firearms are a leading public health problem in the United States has been well documented.[3]

The greatest attention has been paid to deaths with guns as the etiologic agent. There have been few reports in the recent literature describing the incidence of other than fatal firearm injuries.

This is the report of an accidental self-inflicted gunshot wound. The case itself is neither rare nor extraordinary, but it will serve as an introduction to a discussion of this type of injury.

Case Report

A 25-year-old man was admitted to the trauma service after having sustained an accidental gunshot wound to the upper right thigh. The patient was reportedly drinking and "playing" with an old gun when it discharged. He was stable in the emergency room. The entrance wound was just inferior to the right inguinal ligament and the exit wound was below the buttock. The neurovascular status of the extremity was intact by physical examination, but there was some questionable right lower quadrant abdominal tenderness. The alcohol level of blood drawn in the ER was 211 mg/dl.

An arteriogram done to examine the femoral vessels showed no evidence of injury. The bullet wounds were locally debrided and the patient was admitted to the hospital for observation. He remained stable, and was discharged home on the third hospital day.

Discussion

A computer search of the trauma registries of two trauma centers serving a mixture of urban and rural communities was made to identify all patients who had been admitted for management of self-inflicted gunshots wounds during the period from June 1, 1991 to May 30, 1994. This group was then subdivided as to whose wounds had been purposeful (suicidal) and either fatal or nonfatal, and injuries that had been accidental and either fatal or nonfatal. The characteristics of this second group of patients will be discussed here.

During the period under study 4,186 trauma patients were admitted to the two institutions, 31 of them (27 male and 4 female) the victims of accidental, self-inflicted gunshot wounds, for an incidence of 0.7%. The oldest patient in this group was 69 and the youngest 16, with an average age of 34.4 years. The site of injury was an extremity in 24 cases, the head in six, the abdomen in two, and the chest in one. Two patients were wounded at more than one site. One patient died as a result of a head wound sustained while playing Russian roulette.

Hand guns ranging from .22 caliber to .357 magnum were recorded as the agent of injury in 16 instances, whereas rifles accounted for six wounds.

Alcohol use, as defined by a measurable blood level, was documented in 16 patients (51.6%). The mean blood alcohol level was 178.2 mg/dl. Two patients who tested positive for alcohol had also been using marijuana.

The mean length of hospitalization was 3.9 days, indicating that many of the wounds were not serious. A number of patients, however, did sustain significant injury. Four patients suffered nerve injury, two of them developing sympathetic dystrophy. One patient required a frontal lobectomy. There were five extremity fractures and three vascular injuries requiring revascularization. Two patients sustained complex facial fractures and one patient lost an eye. Two patients lost extensive soft tissue, requiring skin grafting. One patient lost a digit and one patient underwent exploratory laparotomy for repair of a visceral injury.

The cause or immediate circumstances of these accidental self-inflicted wounds were as follows: the victim was cleaning the gun in eight instances (five of these patients had been drinking) and loading or unloading the weapon in three instances. Thirteen patients were playing with or handling the gun when it discharged; eight of these had been drinking. Spontaneous discharge occurred in three cases. As noted, one case resulted from the playing of Russian roulette.

A report from the American Medical Association Council on Scientific Affairs[4] written in 1989 stated that "the prevention of firearm deaths and injuries is one of the most complex and controversial issues facing the public health profession in recent years" and that "there are virtually no reliable data on the number of nonfatal firearm injuries."

Death from firearms has been well documented. Between 1933 and 1987 more than 1 million people died

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From the Department of Surgery, James H. Quillen College of Medicine, East Tennessee State University, Johnson City, and the Trauma Service, Holston Valley Hospital, Kingsport.

Identifying Lead Sources by X-ray Fluorescence Spectrum Analysis

MARILYN C. HOLMES, M.S., R.D., L.D.N.

Lead poisoning is the number one environmental disease among children in the United States. About 1.7 million children ages 1 to 5 have this preventable but not incurable disease. During 1994, 26,237 children were screened for lead poisoning in local health departments across the state. Of that total, 2,536 (9.7%) had blood lead levels (BLLs) that were 10 to 14 μg/dl, 294 (1.1%) were 15 to 19 μg/dl, and 193 (0.7%) were ≥20 μg/dl. Lead-based paint that is peeling and chipping is the cause of most (88%) cases in Tennessee. The second greatest cause is from lead in dust on clothing of parents whose occupations and/or hobbies use lead. Other common causes are from old discarded automobile batteries, improperly fired ceramic ware and pottery, and contaminated soil.

The most important components for control of lead poisoning are identification of the probable source(s) of lead poisoning and removal of the source(s) so that the child does not continue being poisoned.

Tennessee Department of Health (TDH) policy states that all children with BLLs of ≥20 μg/dl, 15 to 19 μg/dl for three months, or 10 to 14 μg/dl for one year will be referred to a physician for medical management and to an environmentalist for an environmental home investigation.

In 1993, the TDH received a five-year Childhood Lead Poisoning Prevention grant from the Centers for Disease Control and Prevention to enhance reduction of the prevalence of lead poisoning of children 6 months to 6 years of age. Environmental specialists have been hired with a portion of the grant dollars to provide investigations in four of the TDH's ten administrative regions where the greatest number of lead poisoning cases are found. These four regions are: Memphis-Shelby County, West Tennessee Region, Jackson-Madison County, and Central Tennessee Region. Environmentalists in these regions and in Chattanooga-Hamilton County provide environmental home investigations for children who are enrolled in the TennCare Program, non-TennCare recipients who are participants of the Women, Infants, and Children Special Supplemental Food (WIC) Program, children receiving Head Start physicals, and those with elevated BLLs as determined in door-to-door screenings. Environmentalists will also provide investigations for children enrolled in the TennCare Program when requested by their primary care providers.

In the remaining five regions, the environmentalists in the Division of Food and General Sanitation provide investigations upon referral by public health nurses or primary care providers and for all children enrolled in the TennCare Program.

Until recently, the majority of environmental home investigations were conducted by collecting paint chips and samples of soil and water. These samples were sent to a laboratory for analysis. This process is time-consuming, and scraping paint damages homes. Results from the laboratory must be received before it is known if the probable source of lead poisoning has been found. If no source is found, additional trips to the home may be necessary to locate the source before removal can be facilitated. Factors such as these combine to delay control of disease.

In order to increase efficiency in identifying lead hazards, the TDH has purchased x-ray fluorescence (XRF) spectrum analyzers for environmentalists to use to obtain results of lead content in paint on-site.

XRF spectrum analyzers are easy to use, lightweight, portable computers. The source of energy for the instrument is cobalt 57. Operators must complete extensive training to properly handle and use these instruments. In operation, the lens of the instrument is held against the substrate. When the lens is opened by the environmentalist, the source emits radioactive energy, which when exposed "excites" the material within its field of view. The detector and electronics measure the amount of fluorescence energy. This energy change is perfectly definite for atoms of a given element; therefore, various substances, such as lead, can be identified by their unique energy change. This change produces a reading that will also indicate the concentration of the substance in the substrate. The amount of lead if present is printed on a screen. An environmentalist can analyze as many surfaces as necessary. No damage is done to surfaces during the analysis by the method. The XRF spectrum analyzer can be used as a screening tool to assess the concentration of lead in soil.

Once lead hazards are identified, environmentalists work with the necessary persons (parents, landlords,

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From the Tennessee Department of Health, Nashville. Ms. Holmes is Childhood Lead Poisoning Prevention Coordinator, Environmental Epidemiology.

public housing officials) to assist in lead hazard removal. Many problems may be encountered when trying to assure that a child will live in a lead-safe environment. It may be necessary for the family to relocate while lead is being removed from the home. Finding temporary housing may be a problem. Often families do not want to move. It is not uncommon for landlords who are unwilling to correct the hazard to evict families. Once the home is vacated, another family with young children may move in, only to have their children become poisoned.

With the addition of full-time environmentalists in public health regions where the greatest number of lead poisoned children live and the statewide use of XRF spectrum analyzers, environmental home investigations for lead hazard identification and removal are now being conducted for more children and in a more timely manner. These two factors combine to help provide better control for children suffering from lead poisoning in Tennessee. ❑

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blood flow in these regions increases and allows the colder peripheral blood to reach the central circulation. Additionally, rapid rewarming by warm water immersion has been associated with cardiac arrhythmias. For these reasons, current rewarming strategies include passive and external measures for otherwise healthy and hemodynamically stable patients, and for those patients whose core temperature is greater than 89.6°F.[1]

Actively rewarming patients is often necessary for more severe hypothermia or hemodynamic instability. The least invasive method of active, central rewarming involves inspiring heated mist either by mask or through the ventilator, utilizing the large vascular surface area of the lung for effective heat exchange. For more rapid central rewarming, peritoneal and pleural lavage can be performed with continuously cycling warmed fluids. Additionally, extracorporeal rewarming with hemodialysis or cardiopulmonary bypass devices are the most efficient means of rewarming, and can increase body temperature by 1 to 2 degrees every three to five minutes. Fluid and electrolyte management are also important during rewarming, as hypothermic patients often have intravascular volume depletion.[1,2]

The hypothermic heart is especially susceptible to arrhythmias. In a hypothermic patient, pharmacologic antiarrhythmic therapy and electrical cardioversion are much less effective.[1,2] During experiments in hypothermia, Osborn noted a characteristic change in the electrocardiogram with an additional deflection between the QRS complex and the ST segment.[3] Subsequently referred to as “Osborn waves,” this phenomenon has yet to have a proven electrophysiologic mechanism described. The amplitude of the wave, however, has often been correlated with the degree of hypothermia. The present case demonstrates dramatic Osborn waves on the initial electrocardiogram which resolve completely with rewarming (Figs. 1 and 2). ❑

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Trauma Rounds . . .

(Continued from page 190)

as a result of firearm injuries.[5] In 1987 less than 2% of unintentional injury deaths resulted from shootings.[5] Studies of nonfatal cases have been infrequent. Data collected in 1972 for the National Health Interview Survey suggested a ratio of fatal to nonfatal firearm injuries to be 1:5.[5] A report from the U.S. General Accounting Office stated that in 1988, 1,501 unintentional firearm deaths occurred. An estimate was made that there are four to six nonfatal injuries for every fatal accidental shooting.[6] These surveys did not separate out self-inflicted accidental wounds.

The lack of national statistics on accidental self-inflicted gunshot wounds makes a comparison with the data contained in this report difficult. It seems safe to conclude from the information presented here that this type of injury can account for significant morbidity and an occasional death. ❑

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Loss Prevention Case of the Month

Did the Team Know the Game Plan?

J. KELLEY AVERY, M.D.

Case Report

The patient first went to the Ob/Gyn group for prenatal care when, according to the physician's examination, she was about 12 weeks into her first pregnancy. She gave her doctor a history of nausea since her last menstrual period and one previous episode of pelvic inflammatory disease two years before this visit. She related a family history of hypertension and heart disease.

Her initial examination revealed a short, obese (height 5 ft 1 in, weight 180 lb) young woman whose blood pressure was recorded at 100/80 mm Hg. The complete physical examination revealed only the enlarged uterus compatible with the menstrual history at 12 weeks gestation. The laboratory findings were all considered to be normal. The urine showed a "trace" of protein, thought to be due to vaginal mucous contamination. The blood glucose was recorded at 73 mg/dl. The CBC, including platelets, was normal. RPR, Sickledex, rubella immune, hepatitis B, and Rh antibody screen were all normal.

The routine visits occurred each month as scheduled, and at the 24th week of gestation the urine showed "large ketones." Glucola done that day was reported at 156 mg/dl. She was to return in four weeks to see her attending physician, and at the 28-week visit showed only a "trace of ketones." At 30 weeks there were no abnormal findings. The patient had gained only 11 lb since her first visit, her blood pressure had remained normal, and she had no complaints.

At 33 weeks the findings were "some swelling" and the AFM was positive. It was noted that because of the positive Glucola reported two months earlier, a glucose tolerance test (GTT) was needed as soon as possible. A week later she returned to the laboratory for the GTT, the results of which were: fasting 91, one hour 147, two hours 150, and three hours 151. The results were signed by a member of the three-physician group who was not her primary doctor. The following day she was seen by the office nurse and placed on a diabetic diet and given a one-hour consultation by a nutritionist. Blood tests were done weekly for the following two weeks, and the glucose levels were normal. On visits at 37, 38, and 39 weeks gestation the blood glucose levels were normal. At 40 weeks by dates an ultrasonogram was reported as showing a fetal age of 36.2 weeks, and the further suggestion that the findings were compatible with intrauterine growth retardation (IGR). Again at 40.5 weeks ultrasound suggested IGR. There was a comment in the record, "Induce when favorable." A week later, with a blood glucose of 56 mg/dl, she was sent to the hospital for a non-stress test. Fetal heart monitor tracing was on file at the hospital, but without a comment as to any non-stress test.

Another member of the group admitted the patient to the hospital for induction, commented that she was at 41 plus weeks gestation, and wrote appropriate induction orders. Pitocin was begun at 8:00 AM. Three and one-half hours into the induction the fetal heart tone (FHT) was found to be between 80-100. When the patient was turned on her side, the FHT gradually returned to 130. The O_2 set-up was put in readiness for use. Labor was maintained with Pitocin, and five hours after induction was started, the note, "late decelerations to 80," appeared in the record. With a position change the rate rose to the 130 baseline. Six hours into labor "late decels noted." "Not in good labor yet. O_2 not in use." By this time the cervix was softening some and a fingertip could be inserted into the Os. Eight hours into the induced labor, consideration was given to stopping the Pitocin and planning a two-day induction. The Pitocin was discontinued and orders for a diet were given. After stopping the induction, the contractions continued but were ineffective. The patient was given medicine for pain and returned to the floor. Throughout this attempted induction the observation of "accels" was made several times.

The following morning Pitocin was restarted, with irregular contractions reported. About one hour after beginning again the note, "FHT unreactive," appeared in the record. The obstetrician was present, AROM carried out, and an internal monitor applied. A stat blood glucose was ordered and the report 15 minutes later was 39 mg/dl. Glucose was ordered stat. The FHT returned to 120-130 but BTB variability was much less than it had been throughout the labor. This seemed to return to normal and the induction continued. Eight hours into the second attempt to induce labor the BTB variability was reported as "minimal to moderate." Two hours later "late decels" began to occur and continued. Although the patient was pushing with contractions, no progress was being made. Delivery by outlet forceps was attempted without success and a C-section was done.

The infant required intubation. Apgar scores were 1 at 1 minute, and 4 at 5 and 10 minutes. Cord blood pH was 6.6. Although the baby survived, he was a spastic quadriplegic, microcephalic, and had seizures.

A lawsuit was filed charging all three of the members of this Ob/Gyn group with negligence in permitting a gestational diabetic to go to 41 weeks without operative intervention and for failing to perform the C-section earlier in the course of the induction.

Loss Prevention Comments

How could a gestational diabetic patient be allowed to go to 41.5 weeks without intervention? Was there confusion about the significance of the ultrasonography suggesting a fetal age of at least two weeks less than the history would indicate and the possibility of IGR? What happened to the non-stress test that was ordered? Did all three members of this team know the plan for

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Dr. Avery is chairman of the Loss Prevention Committee, State Volunteer Mutual Insurance Company, Brentwood.

The Case of the Month is taken from actual Tennessee closed claims. An attempt is made to fictionalize the material in order to make it less easy to identify. If you recognize your own case, please be assured that it is presented solely for the purpose of emphasizing the issues presented.

this patient? Several factors in this record suggest that the major problem in this case was the lack of communication between the physicians involved.

This was a three-member group. The patient was seen by all three at one time or another during the prenatal course. In some such groups this is routine, and the patient is informed that she will meet all of the members during the course of her pregnancy. There was a two-month delay between the abnormal Glucola test and the definitive GTT. This would suggest that the "left hand did not know what the right hand was doing." Nowhere does the record indicate that early intervention was planned. We would expect a note recognizing the gestational diabetes and commenting on the possible time that intervention would be done. At a critical time in the pregnancy, about 35 weeks, after the diagnosis had been made, the patient was seen by the office nurse to begin her diabetic diet. She was not seen again for two weeks. Again, we would have expected the documentation of some discussion with the patient about the possible need for a C-section. A good office nurse could have reminded the primary physician that the record was lacking a management plan. Finally, in this very compromised patient, induction was begun by a member of the team who was not the attending physician; failing the first day, the second member of the team, again not the attending physician, continued the induction. The attending physician was the decision maker in proceeding with the C-section.

The signs of a stressed fetus were suggested on the first day of attempted induction. They were unmistakable on the second day, hours before the operation was done. Were the two members of the team who were following the induction reluctant to commit to the operation with the active presence of the attending physician?

Something about this tragic case involving three adequately trained specialists was confusing to them, and appropriate decisions were not made in a timely fashion. There were warning signs all around, and they were not seen and acted upon. From the record, it would seem that failure to plan together for the appropriate management of this young woman with gestational diabetes during her first pregnancy played a large part in this outcome. The group practice of obstetrics demands no less. ❑

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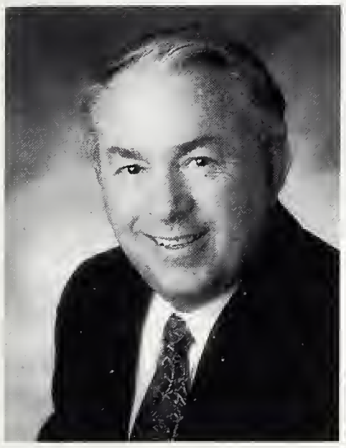

ROBERT E. BOWERS

Change and Challenge

As I begin my tenure as president of the Tennessee Medical Association, I am excited by the challenges facing those of us in the medical profession today, and I am honored by the opportunity to serve my colleagues in this capacity.

In my travels throughout our country and our state attending meetings, workshops and seminars, it has become obvious to me that changes are occurring in our beloved profession. These changes are affecting not only physicians, but all aspects of health care—providers, hospitals, outpatient centers, and nursing care. Society is changing, and our changing society seeks more choices, greater self-determination, and lower costs. As physicians, we are by the nature of our training and our everyday lives at the crux of change, and we will be most directly affected by the changes. My belief is that by taking a hands-on approach and making some strategic choices, we will be able to adapt to these changes.

Change creates anxiety and questions: "How will the changes affect my delivery of health care, my patients' perception of me, my livelihood?" All are valid questions, and all are concerns that need to be addressed in our professional organizations. These are important issues for the future of health care and physicians. Managed health care is now a reality of life for many of us. How we accomplish the changes will have a great impact on our lives and the lives of our patients. One of my goals is to see our organization address the issues surrounding "managed care."

The answer for us, I believe, will be to take this anxiety-producing topic and turn it to our advantage. In our professional lives, we face such challenges daily—and overcome them.

Quality issues must be of paramount importance in our minds and in the delivery of care to our patients. After all, no matter how costs, billing and reimbursement are handled, at the core of our existence is the patient, and the patient's primary concern will always be his quality of care. I hope that in the coming months through education and information we will be able to focus on these issues, and come to a better understanding of the changes taking place.

You may have heard it said that "the lion does not care that you are a vegetarian." Fellow physicians, we are facing the lion and our survival may well depend upon how we "manage" him.

I look forward to the months ahead, and the enlightening interchanges that will come with our sharing of information and experiences.

Robert Bowers

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MAY, 1995

editorials

Managed Care

Value = Quality / Cost

The above equation is accepted uncritically as axiomatic by apologists for and managers of managed care organisms. If you wonder why I chose that word, I didn't; *organisms* just appeared there unbidden as a likely Freudian slip, instead of the word *organizations*, which I had intended. I left it there because after I had thought about it I decided it was not so inappropriate, after all, since it is my understanding of the beast that such organizations, or organisms, are predatory beings that sustain their own life by draining that of their human subjects, which includes doctors. Their symbol is likely 666, as they fulfil the criteria, and we will no doubt all one day have it on our foreheads or be left without care—at least that was the vision of Dr.—excuse me—*Gov.* McWherter. I have yet to hear any plausible explanation of their role that would persuade me otherwise, whereas I can muster ample confirmatory evidence for my thesis.

We carry this month in the *Journal* a paper that is in a sense an exposé, even if an unwitting one, of the system. Its author is a recently retired Vanderbilt professor who in his youth, when he was a Ph.D. candidate and young faculty member, was a junior colleague of mine. I shan't for the moment pursue his comments, as I intend first to dissect the above purported truism.

Though my mathematical skills are limited more than somewhat, it is my understanding that for an equation to work, all of the elements must be definable, and the variables must be independent. Let's look first at *value,* which is arrived at in the equation through the relationship of the two variables *cost* and *quality.* The obvious question about value is, "Value to whom?" The equation implies, and its proponents would have you believe, that the value so derived is universally applicable and acceptable. But is it? We'll return to that after we examine the other side of the equation.

What is quality medical care? Who defines it, and how? (We shall assume that "quality" as used here, as it is almost everywhere when applied to medicine, means high quality; remembering your shopping trips, that turns out not to be necessarily the case generally, as quality unqualified can go either way.) Determining quality is a very simple procedure for the managed care organizations (MCOs), as in fact it is with all similar organizations, as well as governmental agencies. It depends entirely upon specialty board certification of the "provider," a pejorative federalese term that includes doctors along with almost everybody else, from nurses to undertakers. That single criterion is likely the best solution available to them, but though it may be simple, it is also simplistic. I wouldn't want this word to get out, so please keep it dark, but there are board certified doctors in any specialty you can name that I wouldn't let give worm medicine to my dog if I had a dog.

So how is quality determined? The answer is, "With difficulty!" The feds, being neither stupid nor benighted, our snap and even sometimes studied judgements to the contrary notwithstanding, soon found that out, too. As an early answer to their dilemma, a peer review system was established some years ago, but it applied only to Medicare patients, was expensive, and smacked, to the feds, at least, of having the foxes watching the henhouse. Their ultimate solution was the National Data Bank, in which all litigation and all contrary actions or decisions by any regulatory body are documented and stored. Unfortunately, this system can work to the disadvantage of the best doctors, and ultimately to the public, because they are the ones who tend to get the most difficult cases and can therefore look the worst on an outcome and litigation record. For the most part, though, the MCOs and all their counterparts simply stop with board certification as being the most workable method. Though they are likely correct in that, it does not insure quality care. Particularly does it not when cost is figured into the equation. As with shopping for anything else, the best method is to ask a satisfied customer, in this case a patient who survived happily.

It is at this point that I am going to introduce into the equation the problems of the author of our paper, John Robinson, Ph.D. I know the sort of care Dr. Robinson was once receiving, because I know the "Charlie" of whom he writes. I do not know the doctors he believes gave him care of a lesser quality, but I can imagine the scenario. Many of you will recognize it, too, and some may also relate personally to it from one end or the other, or both. Though it is always possible, I doubt that his being a Medicare patient had anything to do with the quality of his care one way or the other. Except that on one occasion a procedure was performed on him by one of those other "providers," which nowadays is, for obvious reasons, becoming the standard of care, it is also not clear to me that he received inferior medical care, and in fact that was not his basic complaint. It was the cursory *manner*, and not the content, of his treatment that upset him.

The problem is not usually with the doctors, though of course sometimes it may be, but with the system. Furthermore, Dr. Robinson's treatment, though at the Medicare discount, was fee for service. At the moment, TennCare is the most notable cause of cursory treatment, not because TennCare patients receive deliberately cursory or inferior treatment, but because their presence imposes something less than ideal care not only on themselves, but on everyone else as well. TennCare has assured its clients that their insurance will provide them with ***the best***, despite its typical inadequacy of reimbursement, which often will not cover even overhead. The requirement that participating doctors must treat any TennCare patient who walks through their doors can also seriously overload their facilities, and jeopardize everyone's care. It is my opinion, which likely counts for not much, if indeed anything, that TennCare violates the provisions of Amendment XIII of the United States Constitution, which says, "Neither slavery nor involuntary servitude, except as punishment for crime whereof the party shall have been duly convicted, shall exist in the United States . . . ." TennCare and Blue Cross/Blue Shield, with its cram-down provision, have conspired to force doctors to work for no pay, which is what TennCare reimbursement amounts to, against their will. That is *de-facto* involuntary servitude. I digress, but I'm going to continue the digression a little longer; so bear with me. You're a lovely captive audience, even though you're only partially captive in that you can cut out at any time. But just think of all the fun you'll miss if you do.

Maybe it is a wonderment to you that TennCare works at all. It was to me until it was pointed out to me that Tennessee doctors have a well-earned reputation for having given over the years their best care to any patient who came along, regardless of ability to pay. Blue Cross, the co-framers of TennCare, knew that, and the McWherter administration capitalized on that graciousness. Behaving like unprincipled thieves and brigands, the administration enlisted none other than the Vice-President of the United States, one of their own, to intercede for them after HCFA caught on to their larcenous scheme and was about to deny them their license to steal. Lacking such friends in high places, we doctors of Tennessee are finding ourselves raped and our practices pillaged; some indeed are foundering.

Now, back to Dr. Robinson. His major complaint is the lack of personal attention—in short, a poor doctor-patient relationship. It is easy, under the circumstances, to see why: *no time*. Nor is the end in sight. There is going to be precious little opportunity for the laying on of hands in the practice climate that has been imposed upon us. One of the solutions Dr. Robinson offers is for the system to get more doctors, but that is easier said than done. The present system is almost guaranteed to produce fewer doctors, not more. A related problem, which is not under discussion here, but which bears emphasizing, is that there are no funds in the state budget for graduate medical education, which means that matching federal money is also unavailable.

The results of that need no expanding upon here.

Now, to get on with the discussion of cost in the equation. It is obvious that insofar as the third party payor, in this case the MCO or HMO, is concerned, a remarkable reduction in the denominator will result from the foregoing, with a consequent increase in the "value," provided the quality remains constant. But it won't. As I have indicated, the reduction of cost is already eventuating in rapidly deteriorating quality. What Dr. Robinson was complaining about was only the happiness factor, but that smoke is bound to indicate a fire that might be serious. Whether or not the HMO is concerned about it, the doctors and their patients are. They see themselves gazing down the slippery slope.

At the same time, we must remember that the equation was not formulated with any consideration of the patient in mind at all. The MCOs, to whom cost means nothing more or less than money—their money—love it. They have no interest at all, and do not factor into the equation, cost to the doctor, which, to comply with the provisions imposed on him by the MCO, is often onerous. In addition, the MCO confines its attention to the short term, because that is where the cash flow (money) is—their cash flow and their money. With the decreased quality that will inevitably ensue, though, long term costs to them are certain to rise. The MCO administrators appear not to care about that, as they will likely no longer be around, and it will then . . . well . . . you know . . . be somebody else's problem.

It should be patently clear by now to anyone with half a brain that the equation, which appears so beautifully simple, will not work. Not only will it fail the patients, who are not even considered, and the doctors, who are considered even less. It will also fail its masters. Not only are the variables *cost* and *quality* not independent; they are tightly interwoven. When costs are reduced to the point they are today, quality is bound to suffer. Hence Dr. Robinson's complaints. As quality continues to deteriorate, the circle keeps repeating in a downhill spiral.

Dr. Robinson has done us, and I hope himself, a service. My prediction is, though, that he is going to have a lot of company in his misery, which is not due to ameliorate, and that things are going to get a lot worse before they get better. Troubles with the system will increase until the system strangles itself. By that time, it will likely be past salvaging. As with the environment and a lot of other things, we (generically, I assure you) are spending our children's, and even worse, our children's children's, heritage. God's injunction that the sins of the fathers (He was including mothers, too, particularly the crowing ones) are visited on their children and their children's children to the third and the fourth generations was not a threat from a vindictive God, as some have maintained. It was just a simple observation on the facts.

J.B.T.

Rolling the Dice

Last winter—not the one just ended, but the one before that—turned out to be a doozy, glazing most of our fair state, and leaving a lot of it more than somewhat less fair than it had been in the fall before the fall of the trees. A friend from Texas and I were discussing, in what context I don't recollect, weather forecasting and its hazards, anent which she observed, "In Texas we don't try to tell you what the weather is going to do. We tell you what it did." Wise choice.

It's a wise choice not only with the weather, but generally. It has been said differently by many sages and those not so sage, but Bobby Burns has not been bested: "The best laid plans of mice and men gang aft aglae," he allowed, the Scottish brogue adding just the right touch of mystique. In fact, one has not even to be a sage, but only a sometime observer of life, and not even a mentally nimble one at that, to be able to note, as often as not in the vernacular, that there's always something around to screw up the system, whatever the system at hand. He might also note that life is pretty much a roll of the dice, or, as the saying goes, "just one damned thing after another."

All that is prefatory to my saying that by the time you read this, I either will or will not have made it through 74 years of life. At this point I have no way of knowing whether I will or will not have continued to remain out of mortal harm's way for another couple of months. There is a song about that with a line that goes, "If it weren't for bad luck, I'd have no luck at all." What do they know? They're still around to sing about it. George Burns claims not to buy any green bananas anymore, but he is nonetheless booked at the London Palladium for his 100th birthday celebration, still a few years down the pike. Divine Providence? Guardian Angel? A roll of the dice? You pick. This isn't a discussion about that, and I don't intend to be lured into a digression that way, either.

Las Vegas fills up every day, or maybe more accurately, every night (actually, it's both) with people who think that though the city was founded and continues thriving on a roll of the dice, they have a system that can beat its system. Some go so far as to hock their future on it, and all but a vanishingly small number of those consequently wind up without a future. Tragically, some even see to it by their own hand. Others more prudently decide how much they can afford to lose, and do. On the other hand, occasionally someone is successful at it—but unpredictably.

Prevalence rates have some predictive value about what number of people may be expected to get sick from a certain disease, but they are no better than the roll of the dice about who those individuals are going to be. This means that in any epidemic there is a chance that any particular one of us might come down sick. Since occasionally somebody has a complication from even the most minor illness, there also might be a death now and then. If that death happens to be yours, the death rate so far as you are concerned is 100%, even though for the population at large it might be only one in millions.

Since the public is titillated by any such horror stories, the newspapers these days make big news of them, and in so doing give the public a badly skewed impression of what their chances are for meeting with disaster in any given situation. Again, recognizing that if you are one of the afflicted it is 100%, your chances of being one of those victims is slim, even vanishingly so.

These days it seems that everybody is an expert on AIDS, mostly because even those who are valid experts have so many gaps in their knowledge. When the experts speak with authority, therefore, all those pseudoexperts say, "Oh, sure! What does he know—really, I mean—for sure?" Aided (no pun intended, unless you wish to believe there is, in which case there still isn't) by the media's desire to build a horror story, then, nobody believes the real experts. They listen to the most strident voices, instead, because strident pronouncements look worse, and are therefore better, if you understand what I mean.

A sportswriter for the Nashville *Tennessean*, who has a tendency to pontificate about whatever subject happens to come his way, even when only the very broadest interpretation can possibly relate it to sports, waxed eloquent, he thought, on the possibility that Greg Louganis' diving board accident had the possibility—he did stop short of likelihood, though not without difficulty, I gathered, and maybe even trepidation—of infecting a great many other athletes with the human immunodeficiency virus (HIV), from which he suffered at the time. Because Mr. Louganis had failed to make his infection known, thereby disqualifying himself from competition, the writer scoffed at the idea that Louganis is, as he has been called, an American hero. Well, if he can gain any comfort from it, I also scoff at the idea that Greg Louganis is a hero, but not for the same reasons. The term hero has, to my mind, become progressively cheapened by having included every famous person, particularly sports idols, which I consider the more appropriate term, instead of confining it to individuals who have given or risked their lives for the safety or betterment of mankind or some unit thereof. I recognize that in believing that I am paddling upstream, but that is still what I think. Mr. Louganis is a very talented young man who is dedicated to his sport and is justly acclaimed for his aquatic accomplishments, but that doesn't make him a hero. Idol, or ideal, maybe. But hero?

In demoting Mr. Louganis, the sportswriter played fast and loose with some of the few facts we have about the HIV. He ignores the known fact that the virus is very fragile, and can be killed by almost anything—chlorine or drying, for instance. While I suppose it is possible for a single virus particle to ultimately kill an already immunologically compromised individual, even that is unlikely. Too, the possibility of transmission of the virus through blood or semen is not constant, because viral concentration in the fluid varies for various reasons, some of them unknown. If I were the doctor who stitched up Mr. Louganis' scalp, I might be worried, but then no ungloved doctor should be stitching up anybody in any case, HIV or not. If I were anybody else who happened to have been around there, I'd forget it. I'd say there's an equal chance of accidentally acquiring the disease just about anywhere else, which is vanishingly small. Of course, as the writer kept pointing out, if one did happen to be one of the unlucky ones, he's as good as dead—or so one would surmise. Actually, though one might so surmise, one doesn't know that, either.

There is something I'll bet the writer doesn't know, though, and that is that if he wants something to *really* worry about, that something exists aplenty in the form of a disease that is widespread in the human race and is infinitely more dangerous than AIDS. Its case fatality rate is lower, to be sure—or at least it doesn't usually kill as quickly. But it kills more people, nonetheless, because of its ubiquity. The virus that causes it is virtually indestructible, and is said to be able to penetrate rubber gloves. Because of the politicization of the HIV, the hepatitis-B virus (HBV) has taken an undeserved back seat. Mankind does have the advantage of possessing an effective vaccine against it, but it is expensive, and not many people other than health care workers are vaccinated against it. That virus can destroy the liver either quickly, leading to an early death from acute yellow atrophy, or a later one from cirrhosis.

To give him something else to think about: both diseases are at their most dangerous before they are diagnosable serologically.

I certainly would not have you believe that by saying all this I am trying to trivialize the AIDS epidemic. On the other hand, we continue fretting about exposure to HIV out of proportion to its dangers to individuals who are not at high risk, largely, I think, due to political pressure from and on occasion personal bias against those groups. This is an emotionally charged issue, and if you wish to quarrel about it in print, resist the urge to do it in the *Journal*, as the subject is laid to rest herewith unless you have something with *scientific* validity to say. Almost nothing that I have seen or heard about it either pro or con has had any rational basis that I could fathom. There is a segment of the population that includes even some doctors that believes a vast conspiracy of silence on the dangers to the public has been perpetrated by the AMA, the United States government, and, depending on who is pointing the finger, countless other entities. I am persuaded otherwise, not because I believe there are not those in high places who would not be above entering into such a conspiracy, but because I personally know enough of the "authorities" whose ethics are unimpeachable.

I started this out by saying life is just a series of rolls of the dice. Despite repeated warnings to the FAA by pilots that the ATR-72 turbojet commuter aircraft behaves unreliably in cold, wet weather, and despite mishaps under those conditions in Europe, where the aircraft is made, an American Eagle flight had to crash in Cincinnati from icy wings before the FAA took any action. There were 68 people who "just happened" to be on board that flight. They all perished, along with the crew.

So roll 'em, I say. Whether you believe it is because your number is up, your guardian angel was napping, the Lord has called you home, or just because of just bad luck, one way or another you're outa here in the end. Only the means and time are uncertain.

J.B.T.

in memoriam

Lemuel Whitley Diggs, age 94. Died January 8, 1995. Graduate of Johns Hopkins University School of Medicine. Member of Memphis-Shelby County Medical Society.

Charles V. Dowling, age 76. Died December 1, 1994. Graduate of Yale University School of Medicine. Member of Memphis-Shelby County Medical Society.

Perry M. Huggin, age 90. Died January 13, 1995. Graduate of Medical University of South Carolina College of Medicine. Member of Knoxville Academy of Medicine.

Robert J. Linn, age 68. Died March 2, 1995. Graduate of Vanderbilt University School of Medicine. Member of Nashville Academy of Medicine.

John W. McCall, age 76. Died January 26, 1995. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

Joseph C. Orman, age 73. Died January 27, 1995. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

Ishmael S. Reid, age 46. Died January 30, 1995. Graduate of University of Arkansas School of Medicine. Member of Memphis-Shelby County Medical Society.

Earl F. Rich, age 63. Died December 12, 1994. Graduate of University of Tennessee College of Medicine. Member of Bedford County Medical Society.

Harold Starr, age 88. Died March 17, 1995. Graduate of Emory University Medical School. Member of Chattanooga-Hamilton County Medical Society.

new members

The *Journal* takes this opportunity to welcome these new members to the Tennesssee Medical Association.

CHATTANOOGA-HAMILTON COUNTY MEDICAL SOCIETY

Robin Barron, M.D., Chattanooga

COFFEE COUNTY MEDICAL SOCIETY

Lamar Clinton Brinion Jr., M.D., Manchester
Gary Keith Lovelady, M.D., Tullahoma
John D. Patsimas, M.D., Tullahoma

CONSOLIDATED MEDICAL ASSEMBLY OF WEST TENNESSEE

Nathaniel Brooks Jr., M.D., Jackson
J. Paul Gray, M.D., Jackson
Parada J. Lemus, M.D., Huntingdon

HENRY COUNTY MEDICAL SOCIETY
Julio Cesar Guerra, M.D., Paris

KNOXVILLE ACADEMY OF MEDICINE
James V. Ferguson, M.D., Knoxville
Kyle W. McCoy, M.D., Knoxville
Joel B. Ragland, M.D., Knoxville

MEMPHIS-SHELBY COUNTY MEDICAL SOCIETY
Sarah A. Cawthon, M.D., Memphis
Karen Fancher, M.D., Memphis
Natalie C. Kerr, M.D., Memphis
Ronald Frederick Pfeiffer, M.D., Memphis
Charles T. Rhodes Jr., M.D., Memphis

MONROE COUNTY MEDICAL SOCIETY
Kenya Kozawa, M.D., Sweetwater

MONTGOMERY COUNTY MEDICAL SOCIETY
James Edward Hampton, M.D., Clarksville
Jatin K. Kadakia, M.D., Clarksville

NASHVILLE ACADEMY OF MEDICINE
Michael T. Beckham, M.D., Nashville
Raymond Francis Bluth, M.D., Nashville
James Ronald Gray Jr., M.D., Nashville
Craig M. Kemper, M.D., Nashville
Sue J. Lee, M.D., Hermitage
Francisco Javier Mayorquin, M.D., Nashville
John Reagan Moore, M.D., Nashville
Obianuju C. Okeke, M.D., Nashville
William R. Schooley, M.D., Nashville
Jane Meredith Siegel, M.D., Nashville

OVERTON COUNTY MEDICAL SOCIETY
Trueman David Smith, M.D., Livingston

PUTNAM COUNTY MEDICAL SOCIETY
George Olaf Mead, M.D., Cookeville
Jeffrey Bunker Stout, M.D., Cookeville

WILLIAMSON COUNTY MEDICAL SOCIETY
Enrique Romo Arevalos, M.D., Brentwood
John F. K. Flanagan, M.D., Franklin

TMA Members Receive AMA Physician's Recognition Award

The following TMA members qualified for the AMA Physician's Recognition Award during February 1995. This list, supplied by the AMA, does not include members who reside in other states.

Physicians can receive the PRA certificate valid for one, two, or three years. For the one-year award, physicians report 50 hours of continuing medical education, including 20 hours of Category 1; for the two-year award, physicians report 100 hours of CME, including 40 hours of Category 1; for the three-year award, physicians report 150 hours of CME, 60 of which are Category 1. Each application for the PRA must also verify participation in Category 2 CME activities.

Thomas M. Beahm, M.D., Chattanooga
William D. Black, M.D., Knoxville
Glenn S. Buckspan, M.D., Nashville
William D. Crawley Jr., M.D., Chattanooga
David G. Doane, M.D., Johnson City
Neil B. Edwards, M.D., Memphis
William D. Falvey, M.D., Memphis
Perry F. Harris, M.D., Nashville
Thomas W. Higginbotham, M.D., Memphis
Fernando T. Miranda, M.D., Madison
Robert E. Palmer IV, M.D., Memphis
Marek M. Pienkowski, M.D., Knoxville
Ronald S. Roney, M.D., Memphis
Solomon A. Rosenblum, M.D., Nashville
Jones F. Rutledge, M.D., Lewisburg
Robert B. Snyder, M.D., Nashville
David J. Switter, M.D., Nashville
Cynthia C. Youree, M.D., Brentwood
Carl W. Zimmerman, M.D., Nashville

personal news

Samuel R. Bastian, M.D., Franklin, has been certified as a Diplomate of the American Board of Pediatrics.

Richard L. Breeden, M.D., Tullahoma, has been certified as a Diplomate of the American Board of Psychiatry and Neurology.

Harold E. Cates, Jr., M.D., Knoxville, has been named a Fellow of the American Academy of Orthopaedic Surgeons.

James J. Merrill, M.D., Kingsport, has received board certification in the cardiology subspecialty of electrophysiology.

announcements

CALENDAR OF MEETINGS

NATIONAL

June 1-4	Mid-Central States Orthopaedic Society—Arlington, Hot Springs, Ark.
June 7-12	American Association of Neuropathology—Hilton del Palacio, San Antonio
June 8-10	Southern Association for Geriatric Medicine—Hyatt Resort, San Antonio
June 8-13	American Diabetes Association—Marriott Marquis, Atlanta
June 11-14	Society for Vascular Surgery—Convention Center, New Orleans.
June 12-15	Society of Nuclear Medicine—Hyatt, Minneapolis
June 14-17	Endocrine Society—Renaissance, Washington, D.C.

June 14-17	Eye Bank Association of America—Hyatt, Hilton Head, S.C.
June 22-25	American Congress of Rehabilitation Medicine—Arlington, Va.
June 23-25	American Association for the Study of Headache—Marriott Copley Place, Boston
June 24-30	Flying Physicians Association—King and Prince Beach Resort, St. Simon Island, Ga.
July 15-17	Asthma 95: Theory to Treatment (sponsored by Am Acad Allergy/Immunology, Am Thoracic Society, and Am College of Chest Physicians)—Palmer House, Chicago
July 16-20	American Association for Clinical Chemistry—Convention Center, Anaheim, Cal.
July 20-23	American Orthopaedic Foot and Ankle Society—Westin, Vail, Colo.
Aug. 8-12	Wilderness Medical Society—Ritz Carlton, Aspen, Colo.
Aug. 13-16	Midwest Surgical Association—Grand Traverse Resort, Traverse City, Mich.

STATE

May 30-June 4	American Sleep Disorders Association—Opryland Hotel, Nashville
June 15-17	Upper Cumberland Medical Society—Fairfield Glade

Actions of the Tennessee State Board of Medical Examiners

February, 1995

Name: Frank McNiel, M.D. (Mosheim, TN)
Violation: Unprofessional or unethical conduct; continued or repeated negligence or incompetence; overprescribing controlled substances.
Action: License placed on probation for one year; DEA certificate suspended during probation; must enter into Impaired Physician Program.

Name: Janet McNiel, M.D. (Mosheim, TN)
Violation: Unprofessional or unethical conduct; continued or repeated negligence or incompetence; overprescribing controlled substances.
Action: License placed on probation for six months; DEA certificate suspended during probation; must enter into Impaired Physician Program.

Name: John Miller, M.D. (Jacksonville, FL)
Violation: Substance abuse; disciplinary action taken by Montana Board of Medical Examiners.
Action: Per agreed order, license revoked.

Name: Frank Pennington, M.D. (Jackson, TN)
Violation: Conviction of a felony; alcohol abuse; dispensing, prescribing, or distributing a controlled substance not in the course of professional practice.
Action: Per agreed order, license revoked; not eligible for reinstatement for one year; assessed civil penalty of $5,000.

TMA Alliance Report

TMA Alliance President Vanessa Clark Ends a Successful Year

What a wonderful time it was in Nashville as the 67th annual meeting of the TMA Alliance conve motivated Alliance members. Ideas and information were exchanged as a new slate of officers was installed.

The articles written this past year for the TMA *Journal* had a theme as *Partners in Medicine*—physicians and spouses working together to promote healthy lifestyles, raise money for medical schools, and work with legislators to find ways to provide medical care for all Tennesseans. The working relationship between the Association and the Alliance led to the TMA Board's decision to appoint the Alliance president an ex officio member of the Board. What an honor it was to witness that decision. I want to take this opportunity to thank the Board for all their support.

The Alliance participated in the TMA's Leadership Summit this past January. Many learned the functions and operations of both the Association and the Alliance. Hopefully, this will be the beginning of many joint functions together.

Physicians and their spouses are caring people. The Alliance continues to work with the TMA on the Domestic Violence Campaign. Over the summer months Alliance members will be organizing the Photo Exhibit tour that will sweep across Tennessee. This tour will bring public awareness to the growing problem of domestic violence and at the same time raise money for shelters for battered women and children.

I encourage all local medical societies to work with their spouse groups, auxiliaries, and alliances. The first step is to invite the local president to your board meetings. Explore ways to work together in such areas as membership, legislation, and health promotion. As we go down this road of health system reform we will do it together, side by side—*Partners in Medicine.* ❑

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Details	1yr	12	15.00	12.00
	2 yrs	24		22.00
Discover		12	29.95	14.98
Ebony or Ebony Man		12	16.00	10.97
Economist		51	125.00	85.00 *
Elle		12	26.00	18.97
Entertainment Weekly		52	51.48	25.74
Esquire		12	15.94	7.97 *
Essence		12	18.00	14.96
Family Circle		17	19.98	15.98
Family Life		6	12.97	9.97
Field & Stream		12	15.94	11.97
Financial World		25	37.50	19.95
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Gourmet	1 yr	12	20.00	15.00
	2 yrs	24		28.00
GQ	1 yr	12	20.00	15.00
	2 yrs	24		28.00
Harper's Bazaar		12	17.94	8.97 *
Harper's Magazine		12	18.00	11.97
# Health		7	18.00	11.97
# Heart & Soul		6	16.97	8.50 *
Home		10	21.94	15.97
Home Mechanix		10	13.94	11.97
# Home Office Computing		12	19.97	11.97
Home PC		12	21.97	12.97
House Beautiful		12	17.97	8.99 *
# Humpty Dumpty (ages 4-6)		8	15.95	10.95
Inside Sports		12	22.00	11.97
# Kid City (ages 6-9)		10	16.97	16.97
Kiplinger's Personal Finance		12	19.95	14.97
Ladies Home Journal		12	19.97	9.99 *
Life		13	32.50	16.25
Longevity		12	24.00	17.97
# MacUser		12	27.00	14.97
# MacWorld		12	30.00	17.97
Mademoiselle	1 yr	12	15.00	12.00
	2 yrs	24		22.00
McCall's		12	13.94	8.99
# Men's Confidential		12	48.00	23.88 *
# Men's Health Magazine		10	20.00	10.00 *
Metropolitan Home		6	15.94	9.97
Mirabella		12	24.00	13.95
Money		13	35.95	22.00
Motor Trend		12	19.94	11.97
# Motorboating & Sailing		12	15.97	8.00 *
# Mountain Bike		11	19.97	10.00 *
# New Choices		10	18.97	12.97
# New Eng Jrnl. of Medicine		52	109.00	109.00
New Republic		48	69.97	40.50 *
New Woman		12	17.00	13.97
New York		50	42.00	25.97
# **New Yorker**	1yr	48	36.00	22.00
	2 yrs	96		40.00
Newsweek		52	41.08	29.97
Omni		12	24.00	17.97
# Organic Gardening		9	25.00	14.97 *
Outdoor Life		12	15.94	11.97
Outside Magazine		12	18.00	14.95
# Parenting		10	18.00	9.00
# Parents		12	20.00	12.00
PC Computing		12	25.00	14.97

Publication		Issues per yr.	REG. SUBSCR. PRICE	YOUR PRICE
# PC Magazine		22	49.97	29.97
# PC World		12	29.90	17.97
# Petersen's Photographic		12	19.94	11.97
Popular Mechanics		12	15.94	8.00 *
# Popular Photography		12	19.94	9.97
Premiere		12	20.00	12.95
# Prevention		12	21.97	10.99 *
Redbook		12	14.97	7.50 *
Road & Track		12	19.94	9.97
Rolling Stone		26	25.95	17.95
# Runner's World		12	24.00	12.00 *
Sailing World		12	24.00	12.00
# Saturday Evening Post		6	13.97	13.97
Self	1 yr	12	15.00	12.00
	2 yrs	24		22.00
# Sesame Street (ages 2-6)		10	19.97	19.97
# Seventeen		12	17.00	14.95
Ski (8 iss) /Skiing (7iss)			11.94	9.97
SmartMoney		12	24.00	12.00 *
Sport		12	19.94	11.97
Sports Afield		12	13.97	7.00 *
Sports Illustrated		54	80.46	49.75
Stereo Review		12	15.94	7.97
# Success		10	19.97	12.97
# 3-2-1 Contact (ages 8-14)		10	17.97	17.97
Tennis		12	23.94	11.97
Time	1yr	52	59.80	29.90
	2yrs	104		59.80
Town & Country		12	24.00	12.00 *
# Travel & Leisure		12	24.00	16.00
TravelAmerica		6	22.00	11.97
# Turtle (ages 2-5)		8	15.95	10.95
U.S. News	1 yr	52	39.75	19.89
	2 yrs	104		39.78
US Magazine		12	23.95	12.97
Vanity Fair	1 yr	12	18.00	13.50
	2 yrs	24		25.00
# Video		12	15.00	7.97
Village Voice		52	47.95	34.95
Vogue	1 yr	12	28.00	21.00
	2 yrs	24		40.00
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Windows Sources		12	28.00	14.97
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Worth		10	15.00	11.97
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TMA continuing medical education opportunities

TMA is accredited by the Accreditation Council for Continuing Medical Education (ACCME) as a sponsor of continuing medical education for physicians. Nonaccredited organizations may request TMA's joint sponsorship of CME activities. As an accredited sponsor, TMA is authorized to designate certain CME activities for credit in the AMA Physician's Recognition Award Program.

TMA is recognized by ACCME as the accreditor of institutions in Tennessee conducting intrastate CME programs. Any organization conducting such programs may apply to TMA for accreditation as a sponsor of CME.

Inquiries regarding TMA joint sponsorship of CME or application for accreditation as a sponsor of CME should be made in writing to: Director of Continuing Medical Education, Tennessee Medical Association, PO Box 120909, Nashville, TN 37212-0909.

IMPORTANT NOTICE

Published in this section are many educational opportunities which come to our attention which might be of interest to our membership. As some of these are very long, full year schedules, and others are detailed descriptions of courses, in order to conserve space, most of them will be published in only one issue of the Journal.

IN TENNESSEE

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Clinical Training Program

The doctor and faculty plan an individualized program to meet the physician's practice needs. This may include contact with patients, participation in clinical rounds and diagnostic procedures, interaction with faculty and housestaff, access to the Medical Center Library and other learning resources, and other benefits of a preceptorship. AMA/PRA Category 1 credit is provided for each hour of participation. Physicians *must* be licensed and be in active practice with evidence of liability coverage.

Ongoing Rounds and Conferences

Arrangements can be made for licensed practicing physicians to attend for credit.

Special Conferences/Seminars

Detailed brochures for the following courses are available. In some cases, registration numbers are limited.

June 16-17	Laryngeal Endostroboscopy
July 18-21	18th Annual Contemporary Clinical Neurology Symposium—Hilton Head, S.C.
Aug. 3-4	Advanced/Functional Endoscopic Sinus Surgery 1995
Aug. 12-13	Color Doppler Sonography—Atlanta
Aug. 29	Laser Assisted Uvulo-Palatoplasty: A New Treatment for Snoring
Oct. 6-7	Substance Abuse Seminar
Oct. 27-28	Laryngeal Endostroboscopy
Nov. 2-4	Lasers in Otolaryngology-Head and Neck Surgery
Nov. 9-11	Vanderbilt Neonatology and AAP District IV Spring Meeting—Asheville, N.C.

For information contact Division of CME, Vanderbilt University School of Medicine, D-8211 MCN, Nashville, TN 37232, Tel. (615) 322-4030.

MEHARRY MEDICAL COLLEGE

Extended Continuing Education Program

Arrangements have been made with many services and departments in the medical school to allow practicing physicians to participate in the service's activities for a period of one day to one week. This program provides an opportunity for physicians to study in depth for a specified period. The schedule of activities is individualized in response to the physician's request by the participating department. The experience includes conferences, ward rounds, audiovisual materials and contact with patients, residents and faculty.

Fee: $75 per day or $275 per five-day week of educational experience including lunch and parking at Meharry Medical College. *Credit:* AMA Category 1 of the Physician's Recognition Award, AAFP, and Continuing Education Units from Meharry Medical College. *Application:* For information contact Henry A. Moses, Ph.D., Director of Continuing Education, Meharry Medical College, 1005 D.B. Todd Blvd., Nashville, TN 37208, Tel. (615) 327-6235.

SAINT THOMAS HOSPITAL

Oct. 7	Contemporary Topics in Surgical Pathology IX: Soft Tissue Pathology

For information contact Registration Secretary, St. Thomas Hospital, Nashville, Tel. (615) 222-2007.

UNIVERSITY OF TENNESSEE

Continuing Education Schedule

Memphis

June 1-2	General Surgery Update
Aug. 7-12	Contemporary Issues in Obstetrics and Gynecology—Destin, Fla.
Aug. 23-26	Pulmonary and Critical Care Medicine—Destin, Fla.
Sept. 14-15	27th Conference on the Mother, Fetus, and Newborn

Knoxville

June 1-2	11th Annual Alzheimer's Disease Symposium—Gatlinburg
June 13-14	Pediatric Advanced Life Support Provider Course—Gatlinburg
June 15-17	40th Great Smoky Mountains Pediatric Seminar—Gatlinburg
June 22-24	10th Annual Smoky Mountains Infectious Diseases Conference—Gatlinburg
June 28-29	Advanced Cardiac Life Support Provider Course
Sept. 25-27	17th Annual Obstetric Office Ultrasound Workshop
Oct. 25-27	Perinatal Update '95—Gatlinburg
Oct. 30-Nov. 1	14th Annual Smoky Mountains Seminar in Obstetrics and Gynecology—Gatlinburg

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VOL. 88, NO. 6

Abstract of the Proceedings of the House of Delegates Of the Tennessee Medical Association, Nashville, Tennessee, April 6-9, 1995

Call to Order

The 160th annual meeting of the Tennessee Medical Association was conducted in Nashville, Tennessee, April 6-9, 1995, with headquarters in the Stouffer Renaissance Nashville Hotel and Nashville Convention Center. The House of Delegates met initially at 3:00 PM, April 6, 1995, with Thurman L. Pedigo, M.D., Nashville, presiding as speaker of the House and Robert D. Kirkpatrick, M.D., Memphis, as vice-speaker.

Invocation

At the opening session, Thomas K. Ballard, M.D., Jackson, gave the invocation: "Almighty and Everlasting Father, who does forgive our sin and heal our diseases. We recognize you as the fountainhead of all life and health.

Bless our efforts throughout these days, that we might seek wisdom tempered with mercy. Enable us to recapture our calling. Give us guidance in our meetings, yet keep our minds ever focused on the ones to whom we seek to relieve suffering.

We recognize only you as the great physician. Therefore, increase our humility and faith even as you increase our knowledge. Give us the vision to see body, mind, and spirit as one. Grant us peace to accept the things that we cannot change, and courage and strength to change the things we can change.

O God, we rest our sure faith in your eternal goodness, and in the belief that you would never willingly afflict any of your children. It is you to whom we turn when there is no health in us. Heal those of us who heal. For we ask all of these things in the name of the Lord. Amen."

Report of the Committee on Credentials

George Eckles, M.D., Murfreesboro, chairman of the Committee on Credentials, reported there was a quorum present. The speaker declared the House was in session.

1994 Minutes Approved

The speaker announced that an abstract of the minutes of the last regular session of the House of Delegates was reproduced in the June 1994 issue of the *Journal of the Tennessee Medical Association.* It was moved and seconded that the abstracted minutes of the 1994 session of the House of Delegates be approved as published in the June 1994 issue of the *Journal.* The motion was adopted.

Reference Committees

The speaker announced the members of the reference committees to consider reports, resolutions, amendments, and all matters requiring action by the House of Delegates.

REFERENCE COMMITTEE ON CREDENTIALS
George Eckles, M.D., Murfreesboro, *Chairman*
Robert R. Casey, M.D., Oak Ridge
Otis S. Warr, III, M.D., Memphis

REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BYLAWS
C. Eugene Jabbour, M.D., Memphis, *Chairman*
Charles E. Jordan, III, M.D., Cookeville
Robert N. Montgomery, M.D., Knoxville

REFERENCE COMMITTEE A
Jesse C. Woodall, Jr., M.D., Memphis, *Chairman*
Dana L. Latour, M.D., Nashville
William R. McKissick, M.D., Knoxville

REFERENCE COMMITTEE B
Ann H. Price, M.D., Nashville, *Chairman*
Robert A. Vegors, M.D., Jackson
David R. Ginn, M.D., Kingsport

REFERENCE COMMITTEE C
Neal S. Beckford, M.D., Memphis, *Chairman*
Subhi D. Ali, M.D., Waverly
Laura B. Powers, M.D., Knoxville

REFERENCE COMMITTEE D
Nancy M. Blank, M.D., Cleveland, *Chairman*
Chet M. Gentry, M.D., Sparta
Charles R. Handorf, M.D., Memphis

COMMITTEE TO ELECT THE OUTSTANDING PHYSICIAN OF THE YEAR
Howard L. Salyer, M.D., Nashville, *Chairman*
Charles Ed Allen, M.D., Johnson City
Charles W. White, M.D., Lexington

Nominating Committees

As required in the Bylaws, the Board of Trustees appointed a Nominating Committee with representatives from each of the three grand divisions of the state. The speaker announced the committee members.

EAST TENNESSEE
William R. McKissick, M.D., Knoxville
Charles Ed Allen, M.D., Johnson City
Sam J. Williams, III, M.D., Chattanooga

MIDDLE TENNESSEE
John W. Lamb, M.D., Nashville
Wendell V. McAbee, M.D., McMinnville
Randall Gary Samples, M.D., Cookeville

WEST TENNESSEE
Hobart H. Beale, M.D., Martin
Charles W. White, M.D., Lexington
Jesse C. Woodall, Jr., M.D., Memphis

ELECTION BY HOUSE OF DELEGATES

April 9, 1995

The preliminary report of the Nominating Committee was presented in the first session of the House of Delegates on Thursday, April 6, 1995. The final report of the Nominating Committee was presented on Sunday, April 9, 1995 at the closing session of the House. Nominees submitted by the committee were voted upon individually, and in each instance the speaker called for additional nominations from the floor. The following were elected.

Newly elected President-Elect
Richard M. Pearson, M.D., Memphis

President-Elect—Richard M. Pearson, M.D., Memphis
Speaker—Thurman L. Pedigo, M.D., Nashville
Vice-Speaker—Robert D. Kirkpatrick, M.D., Memphis
Vice-President (East Tennessee)
Sam J. Williams, III, M.D., Chattanooga
Vice-President (Middle Tennessee)
Warren F. McPherson, M.D., Murfreesboro
Vice-President (West Tennessee)
Neal S. Beckford, M.D., Memphis
AMA Delegate (Middle Tennessee)
Clarence R. Sanders, M.D., Gallatin
(January 1, 1996-December 31, 1997)
AMA Alternate Delegate (Middle Tennessee)
Virgil H. Crowder, Jr., M.D., Lawrenceburg
(January 1, 1996-December 31, 1997)
AMA Delegate (Middle Tennessee)
Thurman L. Pedigo, M.D., Nashville
(January 1, 1996-December 31, 1997)
AMA Alternate Delegate (Middle Tennessee)
Ann H. Price, M.D., Nashville
(January 1, 1996-December 31, 1997)
AMA Delegate (West Tennessee)
Allen S. Edmonson, M.D., Memphis
(January 1, 1996-December 31, 1997)
AMA Alternate Delegate (West Tennessee)
Charles W. White, M.D., Lexington
(January 1, 1996-December 31, 1997)
AMA Delegate (West Tennessee)
Hugh Francis, Jr., M.D., Memphis
(January 1, 1996-December 31, 1996)—filling unexpired term of Dr. Thomas K. Ballard who resigned
AMA Delegate (State-at-Large)
Francis W. Gluck, M.D., Nashville
(January 1, 1996-December 31, 1996)—filling unexpired term of Dr. Hamel B. Eason who resigned
Alternate Delegate (State-at-Large)
Robert C. Patton, M.D., Kingsport
(January 1, 1996-December 31, 1996—filling unexpired term of Dr. Francis W. Gluck
AMA Young Physician Section Delegate
John W. Hale, M.D., Union City
(April 1995-April 1996)
AMA Young Physician Section Delegate
Steven G. Flatt, M.D., Cookeville
(April 1995-April 1996)
AMA Young Physician Section Alterhate Delegate
L. Diane Allen, M.D., Chattanooga
(April 1995-April 1996)
AMA Young Physician Section Alternate Delegate
Tara Sturdivant, M.D., Newport
(April 1995-April 1996)

TRUSTEES
East Tennessee:
Clark E. Julius, M.D., Knoxville (1999)
David R. Barnes, M.D., Chattanooga (1998)
Middle Tennessee:
William B. Harwell, Jr., M.D., Nashville (1998)
West Tennessee:
J. Chris Fleming, M.D., Memphis (1998)

COUNCILORS
Second District—John E. DePersio, M.D. (1997)
Fourth District—A. Austin Jones, M.D. (1997)
Sixth District—H. Victor Braren, M.D. (1997)
Eighth District—James D. King, M.D. (1997)
Tenth District—Patrick J. Murphy, M.D. (1997)

THE ABOVE WERE ELECTED BY THE HOUSE OF DELEGATES

AMENDMENTS TO THE CONSTITUTION AND BYLAWS

The speaker reported that there were five amendments to the Bylaws to be considered at this session by the House.

The proposed amendments to the Bylaws are shown below, with proposed new language shown in **boldface** type and material to be deleted shown in *italics* and enclosed in brackets.

AMENDMENTS TO THE BYLAWS

BYLAW AMENDMENT NO. 1-95

Restructuring of Tennessee Medical Association Committees

Whereas, The committee structure of the Tennessee Medical Association (TMA) provides the TMA with a most efficient way to carry out the policies of the House of Delegates, and the Board of Trustees' referral of issues; and

Whereas, The TMA House of Delegates should regularly review the status of all TMA committees to ensure that they are carrying out their assigned duties and are serving TMA's policy needs; and

Whereas, The TMA Board of Trustees has carefully reviewed the current committee structure and concluded that the House of Delegates should dissolve certain committees and reorganize others; and

Whereas, The TMA Board of Trustees recommends transferring the Committee on Scientific Affairs' duties to the Committee on Continuing Medical Education (CME) since the CME Committee is well suited to address TMA's roles as both an accredited sponsor of CME and as Tennessee's intrastate accreditor of institutions as sponsors of CME; and

Whereas, The Peer Review Committee, which has not met in formal session to review peer complaints in many years, should be eliminated since the Judicial Council already handles most peer review matters, and can appoint an ad hoc peer review committee when conflicts of interest or other circumstances arise; and

Whereas, The issues that the Committee on Hospitals most often faces overlap the work and mission of both the Committee on Legislation and the Committee on Governmental Medical Services and Third Party Payors; and

Whereas, The Advisory Committee to the Tennessee Medical Association Alliance (TMAA), which for many years provided a liaison between the Alliance and the TMA, has been inactive because the TMAA president and other TMAA members regularly participate in meetings of, and serve as consultants to, TMA committees and the Board of Trustees; and

Whereas, The dormancy of the Advisory Committee to the TMAA also has occurred because the TMAA has, for the last few years, employed a part-time secretary whose office is at the TMA headquarters and who networks with the TMA staff; and

Whereas, The TMA Board of Trustees believes that, since the Advisory Committee to the TMAA has become inactive and its functions subsumed, the committee can be dissolved; and

Whereas, The Geriatrics Committee regularly examines issues dealing with patients' long term care and its name should be revised to include that role. Now, therefore be it

RESOLVED, That Bylaw Chapter VII, Section 3, be amended by deletion as follows:

Sec. 3. Division on Scientific Services—This division shall be composed of the following special committees: . . . .[*This division shall also be composed of a standing committee to be known as the Committee on Scientific Affairs. This committee shall be composed of six members which number shall include the editor of the Journal. This committee shall plan and provide the scientific program for each meeting of this Association, and shall assist the editor in preparing the scientific portion of the Journal of the Association.*]; and be it further

RESOLVED, That Bylaw Chapter IV, Part C, Section 6, be amended by deletion as follows:

The editor of the Journal shall be appointed by the Board of Trustees. [*The editor shall act with the Committee on Scientific Affairs to prepare and issue programs for the meetings of the Association.*] Subject to the approval of the Board of Trustees, the editor may select an editorial board. . . ; and be it further

RESOLVED, That Bylaw Chapter VII, Section 7, Paragraph 1, be amended by insertion and deletion as follows:

1. Committee on Continuing Medical Education—This committee shall . . . have as its dut[*y*]**ies** the development and implementation of a continuing medical education program for the physicians of Tennessee[.] **and shall further administer the Tennessee Medical Association's role as an accredited sponsor of continuing medical education for physicians.**; and be it further

RESOLVED, That Bylaw Chapter VII, Section 6, Paragraph 2, concerning the Peer Review Committee, be deleted; and be it further

RESOLVED, That Bylaw Chapter VI, Section 4(a) shall be amended by addition as follows:

The Judicial Council shall hold hearings on all matters relating to . . . disciplinary action . . . for cause, of any member. The Judicial Council also shall hold hearings with respect to the censure of any component society . . . . **The Judicial Council also may review, or appoint an ad hoc peer review committee to review, matters involving unnecessary admissions, excessive length of inpatient stay, delays in the use of x-ray, laboratory, and other diagnostic and therapeutic services, and delays in consultation and referral. In the event of an unavoidable conflict of interest, the Judicial Council shall appoint a peer review committee to hear a peer review matter.**; and be it further

RESOLVED, That Bylaw Chapter VII, Section 6, Part 1, concerning the Committee on Hospitals, be deleted; and be it further

RESOLVED, That Bylaw Chapter VII, Section 5, be amended by deletion and insertion concerning the Advisory Committee to the Tennessee Medical Association Alliance as follows:

Division on Communications and Public Service—This division's committees shall engage in such activities as may result in a proper evaluation by the medical profession of its obligation to the public. This division shall be composed of the following special committees: [*an Advisory Committee to the Tennessee Medical Association Alliance,*] an Infectious Diseases Committee, and a Membership Committee . . . . ; and be it further

RESOLVED, That Bylaw Chapter VII, Section 3, be amended by deletion and insertion to rename the Geriatrics

Committee as follows:

Division on Scientific Services—This division shall be composed of the following special committees: a Committee on Emergency Medical Services; a Committee on Blood Banks and Medical Laboratories; a Committee on Mental Health; a Geriatrics **and Long Term Care** Committee; and a Committee on Maternal and Child Care.

REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BYLAWS—*recommended adoption of Bylaw Amendment No. 1-95.*

ACTION: **ADOPTED**

BYLAW AMENDMENT NO. 2-95

Membership for Osteopaths in the Tennessee Medical Association

Whereas, The 1994 Tennessee Medical Association (TMA) House of Delegates directed the TMA Committee on Constitution and Bylaws to prepare Bylaw amendments that, if approved by a two-thirds majority of the delegates attending the 1995 House sessions, would allow doctors of osteopathy to become full TMA members; and

Whereas, The Committee on Constitution and Bylaws reviewed the TMA Bylaws and has offered the necessary amendments set forth below for consideration by the 1995 House of Delegates; and

Whereas, As noted in the debate last year, since 1969, the American Medical Association has accepted for active membership osteopathic physicians; and

Whereas, Further debate on the issue showed that osteopathic medical students and allopathic medical students progress alongside each other in their training toward medical practice, and the two disciplines share great similarity in undergraduate, graduate, and postgraduate educational requirements in most instances; and

Whereas, Delegates in the minority position voiced opposition to the Bylaws change based on their belief that the TMA was a membership organization for allopathic medical school graduates and should not allow, therefore, graduates of other schools of medicine such as osteopathy to participate in the TMA; and

Whereas, Tennessee law provides equal freedom to practice medicine for both allopathic and osteopathic physicians, and the state regulations governing hospital staff privileges do not distinguish between the two disciplines. Now, therefore be it

RESOLVED, That Bylaw Chapter I, Part A, Section 9, be amended by insertion as follows:

Sec. 9. Wherever the term physician is used in the Bylaws, the following definition shall apply: A physician is a person who, having been regularly admitted to a medical school duly recognized in the country in which it is located, has successfully completed the prescribed course of studies in **allopathic or osteopathic** medicine, and has acquired the requisite qualifications to be legally licensed, under Title 63, Chapters 6 **or 9** of the Tennessee Code Annotated, or a similar statute of another state, to practice **allopathic or osteopathic** medicine; and be it further

RESOLVED, That Bylaw Chapter I, Part A, Section 7, be amended by insertion as follows:

Sec. 7. An intern or resident member is any doctor of medicine **or osteopathy** appointed and serving in an approved intern or resident status in an approved hospital in Tennessee and certified as an intern or resident member of his or her component society; and be it further

RESOLVED, That Bylaw Chapter I, Part A, Section 8, be amended by insertion as follows:

Sec. 8. A student member is any student regularly and duly enrolled in a medical school in Tennessee, a candidate for the degree of doctor of medicine **or osteopathy**, and certified by the student's component society; and be it further

RESOLVED, That Bylaw Chapter I, Part B, Section 3, be amended by insertion as follows:

Sec. 3. Every reputable physician who is legally licensed and registered in Tennessee under Title 63, Chapters 6 **or 9** of the Tennessee Code Annotated, or any other state of the United States, who is practicing or who will agree to practice nonsectarian**, allopathic or osteopathic** medicine, shall be eligible for membership. Interns and residents serving in an approved intern or resident status in approved hospitals in Tennessee and in accordance with Tennessee law, but who are not legally licensed and registered in Tennessee, shall also be eligible for membership. Medical students who are in good standing in approved **allopathic or osteopathic** medical schools in Tennessee shall also be eligible for membership. Veteran members who are otherwise qualified but whose licenses have been revoked solely for failure to register shall continue to be eligible for membership. Each component society shall judge the individual qualifications of its members. Component societies may establish an affiliate membership category for other health professionals if this is deemed appropriate for local purposes, but only physicians as defined in Chapter I(A), Section 9, of the Bylaws are eligible for membership in the Tennessee Medical Association . . . .

REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BYLAWS—*recommended adoption of Bylaw Amendment No. 2-95 as amended.*

ACTION: **NOT ADOPTED**

BYLAW AMENDMENT NO. 3-95

Direct Tennessee Medical Association Membership for Physicians in Tennessee Counties With Fewer Than Ten Eligible Physicians

Whereas, Historically, as required by the Tennessee Medical Association (TMA) Constitution and Bylaws, physicians across Tennessee have been eligible to join the TMA only by joining a local component medical society, and vice versa; and

Whereas, This requirement has served both the TMA and its component medical societies well within certain limits; and

Whereas, For physicians in rural areas, however, the unified requirement often has served to require them to create mere shells of component medical societies with ten or fewer members that never hold meetings, or provide programs and services of any kind; and

Whereas, There are 21 out of 95 counties in Tennessee that are not represented by any TMA chartered component society, and, even though membership potential exists in those counties, TMA's membership requirements hinder member recruitment efforts there; and

Whereas, Physicians in such smaller counties that have purely perfunctory societies should have the option under the TMA Bylaws to join the TMA directly rather than to continue to go through the formality of creating or managing a component society that never meets or functions. Now, therefore be it

RESOLVED, That Bylaw Chapter I, Part A, Section 2, be amended by insertion as follows:

Sec. 2. The active members of this Association shall be **either** active members of the component societies who have been certified to the secretary of this Association, **or physicians who have joined the Association from counties in which there are ten or fewer eligible physicians and where there is no component society available,** and whose dues have been paid for the current year; and be it further

RESOLVED, That Bylaw Chapter I, Part B, Section 3, be amended by insertion as follows:

Sec. 3 . . . Physician and student members of component societies must also be members of the Tennessee Medical Association, **unless they have joined the Association from counties in which there are ten or fewer eligible physicians and where there is no component society available**. Each component society of this Association may amend its constitution. . . . ; and be it further

RESOLVED, That Bylaw Chapter I, Part B, Section 5, be amended by insertion and deletion as follows:

Sec. 5. Component societies are empowered to conduct peer review of their members, and shall have original jurisdiction to review peer review complaints, **except that the Judicial Council shall have such jurisdiction in cases involving physicians who have joined the Association directly pursuant to Bylaw Chapter I, Parts A, Section 2, and B, Section 3.** When a component society, **or the Judicial Council,** determines that a professional review action is warranted, [*it*] **they** shall follow the notice requirements and due process procedures which substantially comply with the policy handbook referenced in Bylaw Chapter VI, Section 4(b). Appeals **from component society decisions** may be perfected and filed with the Judicial Council within thirty days of the component society's final decision on the matter. Any physician aggrieved by an action of the component society resulting in the physician being denied membership, or involving the physician's suspension or expulsion from the component society, shall have the right to appeal to the Judicial Council. [*Any physician aggrieved by an action of the Judicial Council resulting in the physician being denied membership, or involving the physician's suspension or expulsion from the component society and the Association, shall have the right to appeal to the House of Delegates and, thereafter, to the American Medical Association.*]; and be it further

RESOLVED, That Bylaw Chapter I, Part B, Section 8, be amended by insertion and deletion as follows:

Sec. 8. A physician may hold membership in that component society most convenient for him or her to attend, on permission of the society in whose jurisdiction the physician principally practices and that of the society he or she seeks to join, and with consent of the councilor of that district. **If a physician lives and practices in a county that does not have a chartered component society, or is not a part of one, then he or she may join the Association directly. When more than ten physicians from a county belong to the Association directly, then that group of physicians, in order to retain their membership privileges, shall apply for a charter with the Association to form a component society pursuant to the procedures outlined in this Constitution and Bylaws.**; and be it further

RESOLVED, That Bylaw Chapter III, Section 3, be amended by insertion as follows:

Sec. 3. Each component society shall be entitled to send to the House of Delegates each year one delegate for every fifty . . . **Counties from which physicians may join the Association directly shall not be eligible for delegate and alternate delegate representation until a charter to become a component society is granted by the House of Delegates.**; and be it further

RESOLVED, That Bylaw Chapter III, Section 9, be amended by insertion as follows:

Sec. 9. In sparsely settled sections it (Ed. Note: the House of Delegates) shall have the authority to organize the physicians of two or more counties into one component society, the name to be chosen by that society, so as to distinguish them from other societies, and these societies, when organized and chartered, shall be entitled to all privileges and representations provided herein for component societies. **This authority should be exercised only when the physicians of these rural counties have not chosen to join the Association directly under Bylaw Chapter I, Part A, Section 2, and when their numbers do not exceed ten members for both counties.**

REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BYLAWS—*recommended adoption of Bylaw Amendment No. 3-95.*

ACTION: **ADOPTED**

BYLAW AMENDMENT NO. 4-95

Young Physician Section Alternate Delegates

Whereas, The 1994 Tennessee Medical Association (TMA) House of Delegates directed the TMA Committee on Constitution and Bylaws to develop the necessary Bylaw change to allow the chairman of the TMA Board of Trustees, with the advice of the young physician chair, to appoint replacement alternate delegates to the TMA annual meeting and to the American Medical Association–Young Physician Section meetings if the need arises. Now, therefore be it

RESOLVED, That Bylaw Chapter III, Section 7, be amended by insertion as follows:

Sec. 7. It (Ed. Note: the House of Delegates) shall elect the Tennessee Medical Association delegate and alternate delegate to the American Medical Association–Young Physician Section. The Tennessee Medical Association–Young Physician Section shall select candidates from among their membership and recommend the candidates to the Tennessee Medical Association Nominating Committee. **The chairman of the Tennessee Medical Association Board of Trustees, with the advice of the young physician chair, may appoint replacement alternate delegates to the Tennessee Medical Association annual meeting and to the American Medical Association–Young Physician Section meetings should the need arise.**

REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BYLAWS—*recommended adoption of Bylaw Amendment No. 4-95.*

ACTION: **ADOPTED**

BYLAW AMENDMENT NO. 5-95

House of Delegates Involvement in the Peer Review Process

Whereas, The Tennessee Medical Association (TMA), through its component medical societies and the Judicial Council, regularly conducts peer review of its members upon the receipt of complaints from patients and member physicians alike; and

Whereas, In 1991, the House of Delegates amended the TMA's Bylaws both to provide substantial due process steps to protect member physicians who defend themselves against peer review complaints, and to bring the TMA's peer review procedures in line with newly published American Medical Association (AMA) guidelines; and

Whereas, At the House of Delegates' direction in 1991, the TMA Board of Trustees published a new peer review guidebook, modeled after the AMA guidelines for use by TMA's component societies, Judicial Council, and peer review committees, which when adopted and followed, would ensure both a final appellate step to the AMA and an AMA guarantee of litigation defense for the TMA if it were sued for engaging in peer review activity; and

Whereas, The AMA provides a final appellate step for physician appeals of adverse decisions, thereby making the current appeal avenue to the House of Delegates unnecessary and a substantial financial burden on the TMA as more cases arise since the TMA would be required to convene more than 200 delegates simply to review Judicial Council peer review decisions; and

Whereas, With minor Bylaw amendments to remove the House of Delegates appellate step, TMA member physicians will retain substantial peer review protections for adverse peer review decisions with available Judicial Council appellate review and the AMA's review. Now, therefore be it

RESOLVED, That Bylaw Chapter VI, Section 4(d), be amended by insertion and deletion as follows:

(d) The decision of the Judicial Council shall be final and binding on all parties unless within thirty days from the date on which the decision was mailed as provided for herein, an aggrieved member [*or component society*] mails a written notice of appeal to [*the president of*] the **American Medical** Association with a copy to the executive director. **In the case of a component society that is aggrieved by a Judicial Council decision about its charter or status within the Association, the component society may appeal the decision to the House of Delegates within thirty days from the date of the decision.** Thereafter, within sixty days, the president shall convene the House of Delegates for the purpose of having the House hear such **component society's** appeal. All interested parties shall be given at least [*twenty*] **thirty** days written notice of such hearing and shall have the right to be represented by counsel; and be it further

RESOLVED, That Bylaw Chapter VI, Section 4(e), be amended by insertion and deletion as follows:

(e) The House of Delegates shall make a written report of its decision and mail a copy of the same to the [*member and*] component society with respect to [*whom*] **which** the matter relates. The decision of the House of Delegates shall be final.; and be it further

RESOLVED, That Bylaw Chapter VI, Section 4(f), be renamed Section 4(e); and be it further

RESOLVED, That Bylaw Chapter VI, Section 5, be amended by deletion as follows:

Sec. 5. The president of the Association or the president's designee shall notify the Board of Medical Examiners of the state of Tennessee of any final decision of the Judicial Council [*or any decision of the House of Delegates*] which involves a finding that a member has been guilty of unprofessional or dishonorable conduct as defined in Tennessee Code Annotated Section 63-6-214 (or any newly codified section of similar subject matter and effect), or as may be required under the Health Care Quality Improvement Act (42 U.S. Code Sections 11111 to 11152).

REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BYLAWS—*recommended adoption of Bylaw Amendment No. 5-95.*

ACTION: **ADOPTED**

RESOLUTIONS

The following resolutions were adopted by unanimous consent during the opening session of the House of Delegates.

RESOLUTION NO. 1-95

Reaffirmation of Resolutions No. 3-88 and No. 7-88 in Combination (Basic Principles and Standards Regarding the Delivery of High Quality Medical Care)

BY: DAVID G. GERKIN, M.D., CHAIRMAN
TMA BOARD OF TRUSTEES

Whereas, Many health insurance companies and self-insured entities are offering new, drastically different, and limited health care plans to individuals and to groups through their employers, unions, and other organizations; and

Whereas, Many of these plans reduce the quality of care and patient freedom of choice, solely to lessen costs; and

Whereas, Some plans arbitrarily eliminate physicians and hospitals either directly, by not including them in the plan, or indirectly, by the elimination of hospitals where physicians practice, or by using the "cram-down" clause, a coercive tactic that some insurance companies use to force physicians to participate in their health care plans; and

Whereas, Good preventive health care results in long-term savings to patients, as opposed to shortsighted plans that focus on short-term costs that end up sacrificing the long-term well-being of their insureds; and

Whereas, Patients, in some instances, are not offered choices of other plans that may be preferable and in their best interest; and

Whereas, The Patient Protection Act would protect Tennesseans enrolled in managed care plans by ensuring that they can receive needed health care services from qualified physicians and other providers in a timely manner; and

Whereas, This legislation would preserve the important patient-physician relationship by maximizing patient choice, choice of health plan, and choice of medical treatment; and

Whereas, The Patient Protection Act would require that state standards be established for the certification of qualified managed care plans that would ensure patient protection, physician and provider fairness, safeguards in utilization review, and coverage options for all patients. Now, therefore be it

RESOLVED, That the Tennessee Medical Association deplore plans which ignore the importance of health care, the patient's freedom of choice, and the value of the ongoing physician-patient relationship; and be it further

RESOLVED, That the House of Delegates of the Tennessee Medical Association (TMA) reaffirm the following basic principles about the delivery of high quality medical care: 1) That communication and consultation with the TMA be readily available at all times to all responsible parties having an interest in matters relating to the delivery of medical care services and to the public health; 2) That medical care of uniformly high quality be available to all persons living in Tennessee; 3) That the maintenance of high quality in medical care is of paramount importance, and that all other considerations are secondary to this goal; 4) That each practitioner is directly accountable for his/her professional acts and deportment to his/her patients, medical peers, and to authorized licensing agencies, and that the public interest is well protected by such accountability; 5) That lay (nonphysician) control of, or interference with, professionally approved medical care policies and ethical practices is contrary to the public interest and should be prohibited; 6) That patients have the freedom of choice in choosing their physician(s) or their health care delivery system, and that physicians have the freedom of choice in accepting patients except in emergency situations, and that assignment by any third party of patient to physician or physician to patient without freedom of choice is in violation of this principle and cannot be tolerated; and be it further

RESOLVED, That the House of Delegates of the Tennessee Medical Association affirm the basic standards that managed care plans must meet in order to qualify for certification as set forth in the model American Medical Association Patient Protection Act; and be it further

RESOLVED, That the Tennessee Medical Association express and outline its concern by sending a copy of this resolution to appropriate agencies or entities responsible for authorizing and regulating such plans.

ACTION: **ADOPTED**

RESOLUTION NO. 2-95

Reaffirmation of Resolution No. 9-88 (Physician ["Doctors"] Services Costs as Reported by HHS and Medicare)

By: David G. Gerkin, M.D., Chairman
TMA Board of Trustees

Whereas, Physician ("Doctors") fees and costs, when referred to by the Department of Health and Human Services and Medicare, include practitioners other than physician MDs. Now, therefore be it

RESOLVED, That the Tennessee Medical Association, in conjunction with the American Medical Association, continue to urge and demand that the Department of Health and Human Services and the Health Care Financing Administration should at all times distinguish between MDs and non-MDs and discontinue the use of the all-inclusive term "provider" when reporting or referring to costs of physician services.

ACTION: **ADOPTED**

RESOLUTION NO. 3-95

Reaffirmation of Resolution No. 11-88 (Duty to Warn)

By: David G. Gerkin, M.D., Chairman
TMA Board of Trustees

Whereas, In 1988, upon the advice of the Committee on Mental Health, the Tennessee Medical Association (TMA) House of Delegates made it TMA policy to oppose any legislative act that would require physicians to warn potentially endangered third parties of violent patients; and

Whereas, Since that policy pronouncement, there have been legislative and judicial efforts to create a duty for physicians to warn third parties, not only about violent patients, but to warn family members of patients with Rocky Mountain Spotted Fever that they may contract the disease as well; and

Whereas, The creation of a duty to warn merely imposes on physicians extra and unnecessary civil malpractice liability for persons the physicians do not treat and who are not part of the confidential physician-patient relationship; and

Whereas, The American Medical Association Council on Ethical and Judicial Affairs has dealt with the obligation to warn in ethical opinion 5.05, and such an ethical precept precludes the necessity of judicial pronouncements or legislation in this area. Now, therefore be it

RESOLVED, That the Tennessee Medical Association continue to oppose any legislation or judicial mandate that would create a physician's duty to warn either endangered third parties about violent patients, or third parties about other patient medical conditions since the disclosure breaches confidentiality and will chill patients' willingness to be forthright with their treating physicians or to seek needed treatment at all.

ACTION: **ADOPTED**

RESOLUTION NO. 4-95

Reaffirmation of Resolution No. 15-88 (Medicare and HCFA Interference in the Doctor-Patient Relationship)

By: David G. Gerkin, M.D., Chairman
TMA Board of Trustees

Whereas, The Medicare Administration under the direction of the Health Care Financing Administration (HCFA) is routinely interfering in the doctor-patient relationship by distributing information which confuses the patient about his/her responsibility for payment and informs the patient that certain services are not covered, therefore not necessary and a refund is in order; and

Whereas, This interference is being done with the apparent approval of Congress to meet the demands of the Omnibus Budget Act of 1987; and

Whereas, This interference appears to be designed to make the physician appear dishonest in his/her dealings with the patient and thereby undermines the doctor-patient relationship; and

Whereas, The Congress of the United States has been unresponsive, for the most part, to the protest of physicians as individuals and collectively as the American Medical Association; and

Whereas, The physician, in order to maintain his/her condition of respect with his/her patient, needs an organized approach to inform the patient about who is really responsible for the decrease in benefits and about the questionable tactics that HCFA and the Medicare Administration are using to bring about these decreases. Now, therefore be it

RESOLVED, That the Tennessee Medical Association continue to challenge each of its component societies to develop a public relations program to inform patients about the actions of Congress, the Health Care Financing Administration, and the Medicare Administration and about how these actions impact on their benefits; and be it further

RESOLVED, That every component society continue to be encouraged to form a "patient advocacy" committee to deal with the problems created for patients by the information distributed by the Medicare Administration; and be it further

RESOLVED, That the Tennessee Medical Association offer, through its Component Medical Society Relations Program, to assist each component society in implementing the public relations program and the "patient advocacy" committee.

ACTION: **ADOPTED**

The reference committees have the option of recommending a resolution for adoption or rejection, for adoption as amended or substituted, for referral, or for no action. The resolutions that follow are in the form in which they were **adopted, not adopted,** or **referred** by the House of Delegates.

RESOLUTION NO. 5-95

Reaffirmation of Resolution No. 21-88 (Yellow Pages Advertising)

BY: DAVID G. GERKIN, M.D., CHAIRMAN
TMA BOARD OF TRUSTEES

Whereas, The purpose of advertising is to call public attention to a product or service; and

Whereas, The citizens of the State of Tennessee rely on the Yellow Pages of Bell Telephone subsidiaries for information on a variety of products and services; and

Whereas, The Yellow Pages lists Podiatrists and Chiropractors under the heading of "Physician"; and

Whereas, Tennessee Code Annotated, Section 63-19-102(3) defines physician as a "person lawfully licensed to practice medicine and surgery or osteopathy. . . ."; and

Whereas, Webster's Dictionary defines physician as "a person skilled in the art of healing, specifically: a doctor of medicine." Now, therefore be it

RESOLVED, That the Tennessee Medical Association continue to work to ensure that the Yellow Pages and all other advertising media accurately classify all practitioners of the healing arts in order that consumers have access to accurate information.

RESOLUTION NO. 5-95—*considered by the House of Delegates as a reference committee of the whole.*

ACTION: **ADOPTED AS AMENDED**

RESOLUTION NO. 6-95

Physician Malpractice Protection as "State Employees" When Treating TennCare Patients

BY: HAYS MITCHELL, M.D., CHAIRMAN
TMA COMMITTEE ON GOVERNMENTAL MEDICAL SERVICES
AND THIRD PARTY PAYORS

Whereas, The Community Health Agency Act of 1989, Section 15, provides that "designated volunteers providing direct health care for indigent patients shall be considered 'state employees' for the category of 'professional malpractice' pursuant to Tennessee Code Annotated Section 9-8-307"; and

Whereas, This in effect results in the indigent patient suing the state, not the physician, and for a maximum amount of $300,000; and

Whereas, Omnibus Budget Reconciliation Act of 1989 (OBRA) requires that the states demonstrate that Medicaid patients have provider accessibility equal to that of any other patient; and

Whereas, Malpractice considerations prevent many physicians from participating fully in the TennCare program; and

Whereas, TennCare is a very discounted federal/state funded program that reimburses providers, in many instances, below cost—essentially making them underpaid state employees for TennCare patients; and

Whereas, The Tennessee Medical Association is dedicated to providing access to quality medical care for all Tennesseans. Now, therefore be it

RESOLVED, That the Tennessee Medical Association request the state legislature and the governor to pass and sign legislation that would treat medical professionals providing health care for TennCare patients as "state employees" for the category of "professional malpractice" pursuant to Tennessee Code Annotated Section 9-8-307.

REFERENCE COMMITTEE A—*recommended adoption of Resolution No. 6-95.*

ACTION: **ADOPTED**

RESOLUTION NO. 7-95

Tennessee Medical Association Annual Dues

BY: DAVID G. GERKIN, M.D., CHAIRMAN
TMA BOARD OF TRUSTEES

Whereas, The Tennessee Medical Association (TMA) House of Delegates in 1990 adopted Resolution No. 3-90 stabilizing annual dues for a five-year period at $355 and directed that the Board of Trustees review the entire dues structure in detail and report its recommendations to the House in 1995, said report being a part of Board of Trustees Report B; and

Whereas, The House of Delegates in 1993 adopted Emergency Resolution No. 39-93 directing that funding for the Impaired Physician Program be increased to $150,000 annually and authorizing a $15 dues increase to fund the additional support; and

Whereas, The Board of Trustees has been able to delay implementing a $15 dues increase until the present time; and

Whereas, The Board's review of the dues structure as contained in Board of Trustees Report B outlines the dire need of increasing dues $25 in addition to the previously approved increase in 1993 of $15; and

Whereas, The Board of Trustees has utilized all resources available to the Association to fund day-to-day activities, particularly as they relate to TennCare, including the infusion of more than $750,000 from TMA Physician Services, Inc. during the past five years; a $100,000 loan from the TMA Student Education Fund (SEF); and re-allocation of $150,000 from the budget of the TMA Community Awareness Resource and Education (CARE) program for the purpose of TennCare communications to the public and the TMA membership; and

Whereas, Reserve funds of the TMA have also been used to help offset the costs of the TennCare litigation and now stand at their lowest level in more than twenty years; and

Whereas, The House of Delegates in 1994 adopted Resolution No. 25-94 calling for implementation and use of new technology in order to bring the internal and external communications capabilities of the Association into the next century which will place an additional financial burden on the Association. Now, therefore be it

RESOLVED, That beginning in 1996, the annual dues for active members of the Tennessee Medical Association will be $395 which represents a $40 increase, $15 of which was approved by the House of Delegates in 1993.

REFERENCE COMMITTEE C—*recommended adoption of Resolution No. 7-95.*

ACTION: **ADOPTED**

RESOLUTION NO. 8-95

Contract Review

BY: ARNOLD M. DRAKE, M.D., DELEGATE
MEMPHIS-SHELBY COUNTY MEDICAL SOCIETY

Whereas, In this time of MCOs, PPOs, EPOs, and PHOs, physicians are being presented with new participating agreements with these organizations; and

Whereas, Physicians in many cases are unaware of many of the implications of signing these contracts; and

Whereas, Physicians are in need of an advocate to interpret these contracts and give a fair explanation of their provisions. Now, therefore be it

RESOLVED, That the Tennessee Medical Association (TMA), or its designated agent, offer at no charge to members of the TMA, a contract review service. In addition, the TMA, through its publications, will notify the members of this service and will publish lists of contracts which have been reviewed.

REFERENCE COMMITTEE C—*recommended nonadoption of Resolution No. 8-95.*

ACTION: **REFERRED TO TMA BOARD OF TRUSTEES FOR DECISION**

RESOLUTION NO. 9-95

Home Health Care Patient Orders

BY: THOMAS K. BALLARD, M.D.
EX-OFFICIO DELEGATE

Whereas, Physicians frequently are brought orders by home health care agencies for patients who either are unknown or only remotely known to the physicians; and

Whereas, The signing of such orders without seeing the patient is wrong; and

Whereas, Rules and guidelines, which address proper procedure to follow in this matter, have been published by Milliman and Robertson and should be available in most hospital libraries for physicians to review. Now, therefore be it

RESOLVED, That the Tennessee Medical Association urge all physicians not to sign any order from home health care agencies for patients not currently under their care; and be it further

RESOLVED, That this resolution be transmitted to the Tennessee Association for Home Care requesting that member agencies be urged to refrain from asking physicians to sign any order for home health care and durable medical equipment for patients not currently under the physicians' care.

REFERENCE COMMITTEE B—*recommended adoption of Resolution No. 9-95 as amended.*

ACTION: **ADOPTED AS AMENDED**

RESOLUTION NO. 10-95

Athletic Trainers

BY: JAMES T. CRAIG, JR., M.D.
TMA SPORTS MEDICINE COMMITTEE

Whereas, According to recent studies conducted by the National Athletic Trainers Association and an independent study in North Carolina, the use of athletic trainers in high school athletics significantly reduces the incidence of re-injury among athletes; and

Whereas, The National Football League, the National Basketball Association, and Major League Baseball require on-site athletic trainers at all events and at team practices to help ensure the safety and well-being of athletes; and

Whereas, A high percentage of national collegiate programs also utilize the services of athletic trainers for the same purpose; and

Whereas, Only 17 percent of the nation's high schools and only seven of Tennessee's 335 high schools employ full-time athletic trainers. Now, therefore be it

RESOLVED, That the Tennessee Medical Association endorse employing full-time athletic trainers to work closely with team physicians to significantly increase the quality of care provided to athletes and to help reduce the rate of re-injury; and be it further

RESOLVED, That the Tennessee Medical Association endorse the concept that all high schools in Tennessee should seek to utilize full-time, on-site athletic trainers rather than contract services; and be it further

RESOLVED, That the Tennessee Medical Association Sports Medicine Committee distribute a copy of this resolution to the Tennessee Secondary School Athletic Association, the State Board of Education, the state Parent-Teacher Association, all state high schools, and the Tennessee Athletic Trainers' Society.

REFERENCE COMMITTEE B—*recommended nonadoption of Resolution No. 10-95.*

ACTION: **NOT ADOPTED**

RESOLUTION NO. 11-95

Team Physician Support for Local High Schools

BY: JAMES T. CRAIG, JR., M.D.
TMA SPORTS MEDICINE COMMITTEE

Whereas, Many sports programs in high schools across the state lack the needed medical support to ensure the safety of their athletes; and

Whereas, The Tennessee Medical Association (TMA) Sports Medicine Committee has worked closely with the Tennessee Secondary School Athletic Association to identify contacts at all state high schools for the dissemination of health information; and

Whereas, There are schools that lack team physicians in certain counties and regions of the state where there are also TMA component medical societies; and

Whereas, The TMA Sports Medicine Committee can provide each TMA medical society with the addresses and contacts for high schools in their region. Now, therefore be it

RESOLVED, That all Tennessee Medical Association component medical societies contact high schools in their county or region to determine the need for medical support as it pertains to athletic programs; and be it further

RESOLVED, That all Tennessee Medical Association component medical societies attempt to fulfill the medical needs of local high schools by making member physicians aware of schools lacking proper medical support and encouraging them to volunteer to serve as a team physician.

REFERENCE COMMITTEE B—*recommended adoption of Resolution No. 11-95.*

ACTION: **ADOPTED**

RESOLUTION NO. 12-95

Registration Fees Charged to Members for Attendance at Annual Meeting

BY: JOHN W. LAMB, M.D., DELEGATE
NASHVILLE ACADEMY OF MEDICINE

Whereas, The Tennessee Medical Association (TMA) is a voluntary association of the physicians of Tennessee; and

Whereas, The TMA has long used its annual meeting as an opportunity for members to meet, visit, and discuss problems and concerns with their leaders, both physician officers and staff; and

Whereas, Continuing goals for the meeting have included involving a larger number of physicians in the organization and encouraging participation in the activities of the Association through attendance at annual meetings; and

Whereas, A fee for registration at the annual meeting constitutes a charge for participating and penalizes those members who are active in the Association, whether they are delegates, specialty society members, or specific event attendees; and

Whereas, Registration at the annual meeting has traditionally been a benefit of membership. Now, therefore be it

RESOLVED, That the House of Delegates commend the Tennessee Medical Association (TMA) Board of Trustees and the staff for the new format of the annual meeting and encourage efforts to make the activities of the TMA more attractive and more popular with members; and be it further

RESOLVED, That the House of Delegates instruct the Tennessee Medical Association Board of Trustees to re-adopt previous policy on the annual meeting registration that all extra activities, seminars, and social functions be paid for by participants, but that registration be considered a benefit of membership and be free to members; and be it further

RESOLVED, That this resolution, unless modified or revoked by the House of Delegates, shall continue in effect as official policy of the Tennessee Medical Association.

REFERENCE COMMITTEE B—*recommended nonadoption of Resolution No. 12-95.*

ACTION: **REFERRED TO TMA BOARD OF TRUSTEES FOR DECISION**

RESOLUTION NO. 13-95

Tennessee Medical Association Membership

BY: ARNOLD M. DRAKE, M.D., DELEGATE
MEMPHIS-SHELBY COUNTY MEDICAL SOCIETY

Whereas, The Tennessee Medical Association (TMA) membership is open to all physicians of the State of Tennessee; and

Whereas, A public statement by the TMA of its nondiscrimination policy on membership would be seen to encourage membership by physicians who have otherwise thought they were less than fully welcomed; and

Whereas, The American Medical Association (AMA) adopted such language in June, 1994, as published Opinion 9.03 in the AMA Code of Medical Ethics. Now, therefore be it

RESOLVED, That the Tennessee Medical Association (TMA) reaffirm that opportunities for membership in the TMA, with its organized activities including medical education and training, employment listings in the *TMA Journal,* and all other aspects of professional endeavors, should not be denied by the TMA to any duly licensed physician because of that physician's sex, color, creed, race, religion, disability, ethnic origin, national origin, sexual orientation, or age; and be it further

RESOLVED, That the existence of the Tennessee Medical Association's policy of nondiscrimination in membership recruitment and services be made known to officers of component medical societies for their appropriate use.

REFERENCE COMMITTEE D—*recommended adoption of Resolution No. 13-95 as amended.*

ACTION: **ADOPTED AS AMENDED**

RESOLUTION NO. 14-95

Membership Recognition Awards Program

BY: JOHN W. LAMB, M.D., DELEGATE
NASHVILLE ACADEMY OF MEDICINE

Whereas, The Tennessee Medical Association (TMA) is a voluntary association of the physicians of Tennessee; and

Whereas, Members of the TMA who renew their membership yearly over a period of years make a significant contribution to the success of the TMA's programs and activities; and

Whereas, The Membership Committee of the TMA recommends that the contribution made to the physicians and citizens of Tennessee by members who continue to renew their membership be recognized with awards given by the TMA. Now, therefore be it

RESOLVED, That with the guidance of the Board of Trustees and the Executive Director, the Membership Committee and staff establish a recognition policy for physicians who have been members for five, 10, and 25 years, in addition to the current policy of recognizing those who have been graduates of medical school for 50 years, and that this special recognition be given by pins, badges, or plaques as deemed appropriate for increasing longevity of membership; and be it further

RESOLVED, That the Tennessee Medical Association make efforts to provide 25-year awards to members at meetings of the House of Delegates or at meetings of the members' component medical societies.

REFERENCE COMMITTEE D—*recommended adoption of Resolution No. 14-95.*

ACTION: **ADOPTED**

RESOLUTION NO. 15-95

(Special Resolution)

The Ballard Motion

BY: ALLEN S. EDMONSON, M.D.
EX-OFFICIO DELEGATE

Whereas, Thomas K. Ballard, M.D., of Jackson, Tennessee, and Consolidated Medical Assembly of West Tennessee, has made many contributions to medicine and to the Tennessee Medical Association (TMA); and

Whereas, According to "Davis' Rules of Parliamentary Procedure" and other parliamentary procedure codes, each deliberative body may adopt its own special rules as it desires; and

Whereas, One of the most memorable contributions to efficient operations of the TMA House of Delegates and its election process is the motion which Dr. Ballard has standardized, "Mr. Speaker, I move that nominations cease and this nominee be elected by acclamation." Now, therefore be it

RESOLVED, That as a tribute and in recognition of Dr. Thomas K. Ballard's exemplary service to the Tennessee Medical Association (TMA) House of Delegates that the motion, "Mr. Speaker, I move that nominations cease and this nominee be elected by acclamation," be hereafter and forever known to the TMA House of Delegates as the "Ballard Motion"; and be it further

RESOLVED, That therefore the words "I move the Ballard Motion" become a part of the permanent rules of order of the Tennessee Medical Association House of Delegates as the accepted substitute for his famous words and contribute even further to its efficient operation.

SPECIAL RESOLUTION—*considered by the House of Delegates as a reference committee of the whole.*

ACTION: **UNANIMOUSLY ADOPTED**

MEMORIAL RESOLUTION

Carl E. Adams, Sr., M.D.

BY: GEORGE ECKLES, M.D., DELEGATE
RUTHERFORD COUNTY-STONES RIVER ACADEMY OF MEDICINE

Whereas, Carl E. Adams, Sr., M.D. was a lifelong resident of Rutherford County and contributed much to quality of life of its residents; and

Whereas, Dr. Adams practiced general surgery in Rutherford County in excess of 25 years, established an excellent reputation, and paved the way for the development of an excellent medical community; and

Whereas, He was co-founder of the Murfreesboro Medical Clinic, one of the larger multispecialty groups in the area, and, as a visionary, had a clear view of the future of medical practice to come; and

Whereas, Dr. Adams was an outstanding medical philanthropist, attending to thousands of patients who could not afford to reimburse him; and

Whereas, Dr. Adams exemplified statewide leadership when he became a charter member of the Tennessee Medical Association's (TMA) Long-Term Care Committee, now known as the Geriatrics Committee, and faithfully served the TMA in that position; and

Whereas, Nationally, he served on the American Medical Association committee that first defined the role and responsibilities of medical directors in long-term care facilities; and

Whereas, In 1971, he founded and chaired until his death the National Health Corporation, one of the country's largest nursing home organizations; and

Whereas, He always supported the medical directors of long-term care facilities within his company and encouraged them to attend state and national meetings to improve their ability to serve the residents of these facilities; and

Whereas, He established the Foundation for Geriatric Education to promote long-term care throughout America; and

Whereas, The American College of Health Care Administration named him Distinguished Administrator in 1983; and

Whereas, The TMA recognized him as Outstanding Physician of the Year in 1986; and

Whereas, He and his wife established the Adams Chair of Excellence in Health Care Services at Middle Tennessee State University in 1987; and

Whereas, Carl E. Adams, Sr., M.D., departed this life of devotion to care of the elderly, particularly in the long-term care setting, on September 7, 1994, at the age of 81 years. Now, therefore be it

RESOLVED, That we, the members of the House of Delegates of the Tennessee Medical Association here assembled, express our sorrow at the passing of Carl E. Adams, Sr., M.D., honor him at this time for his achievements, and pledge to continue to honor him in the future by carrying out the directive of the Geriatrics Committee which he helped create; and be it further

RESOLVED, That this resolution memorializing the life of Carl E. Adams, Sr., M.D. be spread upon the minutes of the Tennessee Medical Association; and be it further

RESOLVED, That a copy of this resolution be appropriately engrossed and presented to the family of Carl E. Adams, Sr., M.D.

RESOLUTION OF COMMENDATION

Commendation of American Medical Association for Supporting TMA's TennCare Advocacy Efforts

BY: DAVID G. GERKIN, M.D., CHAIRMAN
TMA BOARD OF TRUSTEES

Whereas, For the past two years, the Tennessee Medical Association (TMA) has strived to protect the interests of patients and TMA member physicians by advocating for meaningful and fundamental changes in the TennCare Demonstration Project; and

Whereas, The American Medical Association (AMA) has augmented TMA's advocacy by facilitating meetings with, writing position letters to, and lobbying officials in the White House, the Department of Health and Human Services, and the Health Care Financing Administration for such changes; and

Whereas, The AMA's offices of the Executive Vice-President, General Counsel, and Government and Political Affairs have been instrumental in advising and instructing the TMA Board of Trustees and staff about the requirements of federal Medicaid law and waiver programs generally; and

Whereas, The AMA also provided critical guidance and financial support to the TMA in preparing, filing, and pursuing its litigation against the State of Tennessee to protect the rights of TennCare patients and providers across the state. Now, therefore be it

RESOLVED, That the Tennessee Medical Association (TMA) commend the American Medical Association (AMA) for helping the TMA protect the interests of patients and TMA member physicians by advocating for meaningful and fundamental changes in the TennCare Demonstration Project, including the AMA's financial support, legislative and policy guidance, and advice with TMA's TennCare litigation; and be it further

RESOLVED, That the Tennessee Medical Association forward a copy of this resolution of commendation to the Board of Trustees of the American Medical Association (AMA) and AMA executive staff members.

RESOLUTION OF COMMENDATION

William V. Wallace

BY: L. HADLEY WILLIAMS, JR.
TMA CHIEF EXECUTIVE OFFICER

Whereas, William V. "Bill" Wallace has faithfully served the Tennessee Medical Association since 1971; and

Whereas, Bill Wallace will be retiring as a member of the executive staff in December, 1995; and

Whereas, He has provided direction for the Tennessee Medical Association Student Education Fund, Inc., for the past 22 years, and as a result of his leadership it is one of the most effective and efficient operations of the Association; and

Whereas, As Manager of Exhibits he has been the driving force behind the increased quality of the exhibits at the Annual Meeting, which has provided each member with the latest technical and scientific advances in medicine and medical practice; and

Whereas, Because of his leadership the TMA has one of its most popular member programs in the annual Medicine and Religion Breakfast, providing the members with spiritual growth and enlightenment; and

Whereas, The annual TMA Rural and Community Health Conferences, under Bill's guidance, provide members of the general public with access to health education that no other public or private organization offers in the State of Tennessee; and

Whereas, This Annual Meeting marks his 24th consecutive and final meeting of the Tennessee Medical Association, and the House of Delegates wishes to express its profound appreciation for his dedicated service. Now, therefore be it

RESOLVED, That the Tennessee Medical Association House of Delegates here assembled this 9th day of April, 1995, honor and extend its sincere gratitude to William V. Wallace for his 24 years of dedicated leadership and service to the Tennessee Medical Association; and it be further

RESOLVED, That William V. Wallace be presented a permanently engrossed copy of this resolution.

HELP FOR IMPAIRED PHYSICIANS

The Tennessee Medical Foundation Impaired Physician Peer Review Committee assists doctors who are suffering from the disease of chemical dependence, or mental or emotional illness, or both, including certain behaviors problematic for physicians. The thrust of the program is rehabilitative, not punitive. The Committee is composed of physicians who have special expertise in these areas, some from personal experience. Effective treatment for these illnesses is achieved most easily when the disease or illness is detected early. The Committee urges family, friends, and associates to avoid misguided sympathy which enables a physician's impaired condition to deteriorate.

HELP US TO HELP

Call the TMF Impaired Physician Program at (615) 385-3319; outside Nashville call collect. Telephone message service available around the clock.

DISTINGUISHED SERVICE AWARDS

The Distinguished Service Award, established in 1964, is presented annually by the TMA Board of Trustees to member physicians in recognition of outstanding service or contribution to the advancement of medical science, the TMA, or the public welfare, whether civic or scientific in nature. At TMA's 160th annual meeting in Nashville, TMA Board of Trustees Chairman David G. Gerkin, M.D., presented three worthy recipients with this prestigious award.

Charles F. Barnett, M.D., was honored for his efforts to establish a regional flu vaccination program for the residents of East Tennessee. In 1994, due to the efforts of Dr. Barnett, the medical community of greater Knoxville held its first free flu vaccination program. On one Saturday in October, volunteers administered more than 7,000 flu shots to residents of Knoxville and Maryville and raised more than $37,000 for local charities.

Through his own office, Dr. Barnett initiated the program two years ago and prepared the groundwork for the extremely successful public service program. All material—serum, syringes, gloves, and manpower—were donated. Shots were free and contributions received from recipients who could pay were donated to the Knoxville Empty Stocking Fund and the Knoxville Mobile Meals.

Charles F. Barnett, M.D.

Dr. Barnett, 44, is a board-certified internist with Ft. Sanders Hospital in Knoxville. He received his medical degree in 1975 from the University of Tennessee College of Medicine in Memphis, and completed his internal medicine residency at Baptist Memorial Hospital in Memphis in 1980.

He is a member of the American Medical Association, the TMA, and the Knoxville Academy of Medicine.

Edward W. Reed, M.D., was honored for his recent personal contributions leading to the opening of the Ambulatory Care Center and the Pediatric Burn Unit at the Regional Medical Center (The MED) in Memphis.

Dr. Reed's work last year for The MED is just another milestone in his personal list of accomplishments to improve the medical community for the citizens of Memphis.

Edward W. Reed, M.D.

- It was Dr. Reed's visionary leadership that led to the creation of the Elvis Presley Memorial Medical Trauma Center, the only level one trauma center operating within a 150-mile radius of Memphis. The Center is the fourth largest trauma center in the nation, treating more than 4,000 patients annually.
- In 1981, when the Shelby County Health Care Corporation assumed the operation of The MED, the facility was in dire need of focus and direction. Dr. Reed's tireless dedication and personal contributions helped to revitalized the physical well-being of The MED with the establishment of the Jefferson Pavilion in 1983, the Jesse Turner Tower in 1993, and the Ambulatory Care Center in 1994.

Dr. Reed, 73, a board-certified general surgeon, received his medical degree in 1955 from Meharry Medical College in Nashville and completed his general surgery residency at Meharry in 1960.

Recognized often for his contributions to his community and profession, Dr. Reed received the Memphis Kiwanis Club's Outstanding Senior Citizen of the Year Award, the Tennessee Hospital Association's Meritorious Service Award, the National Council of Christians and Jews Community Service Award in Medicine, the Alpha Phi Alpha Fraternity Humanitarian Award, and many more.

Current positions held by Dr. Reed in various organizations include board chairman for the Shelby County Health Care Corporation; member of the University of Tennessee Board of Directors since 1990; member of Meharry Medical College Board of Directors since 1983; and board member of St. Jude Children's Research Hospital since 1978.

Harold Vann, M.D., was honored for his contributions to establish a managed care clinic for children at Clarksville Memorial Hospital, and for his time and effort spent trying to reshape TennCare as president of the Tennessee Pediatric Society.

TennCare started abruptly in January 1994 and forced many communities to look for alternative ways to handle increased patient loads with diminished funds. In Clarksville, through the leadership and consultation of Dr. Vann, Kids Care was created. Local pediatricians affiliated with Clarksville Memorial Hospital started a managed care clinic for pediatric patients, many who were covered by TennCare. The new working relationship proved successful for the patients, the physicians, and the hospital alike.

As president of the Tennessee Chapter of the American Academy of Pediatrics since 1992, Dr. Vann has served as spokesman for pediatricians and has traveled the state extensively presenting the Academy's views and opinions on TennCare.

Dr. Vann, 65, earned his medical degree in 1954 from the University of Tennessee College of Medicine. He completed his pediatrics residency at the City of Memphis Hospital in 1965-66, and at Vanderbilt University Hospital in 1975-76.

Harold Vann, M.D.

Board-certified in pediatrics in 1978, Dr. Vann was in private practice at the Children's Clinic in Clarksville until January 1995, when he embarked on a new venture as medical director of the Cumberland Pediatric Foundation. The purpose of the Foundation is to coordinate services for pediatricians and family physicians in the Vanderbilt service area of Tennessee and Kentucky.

He has served as chief of pediatrics and chief of staff at Clarksville Memorial Hospital, as a member of the State of Tennessee Perinatal Subcommittee on Levels of Care, and as a member of the Credentialing Committee for Cigna Insurance Company.

COMMUNITY SERVICE AWARDS

Each year since 1976, the Tennessee Medical Association has been privileged to present its Community Service Award to citizens who have made contributions to their community and state in the field of health care. At the TMA's 160th annual meeting in Nashville, TMA Board of Trustees Chairman David G. Gerkin, M.D., presented the awards to this year's recipients for their efforts to promote better general health and well-being in their respective communities.

Janet Brown has been a volunteer to the Holston Valley Hospital (HVH) Auxiliary for 31 years. During that time she has represented HVH as a member of both the Tennessee Hospital Association (THA) and the American Hospital Association (AHA). She has served on the Board of Directors of the Auxiliary, both as president and vice-president, as patient representative, recording secretary, on the Finance Committee, the Nominating Committee, the In-Service Committee, and the Scholarship Committee. She instituted the Volunteer Appreciation Week and the HVH's Patient Representative Program. She currently is on the Holston Valley Healthcare, Inc., Board of Directors and on the Cancer Advisory Council.

Her involvement with the THA led her to become a member of THA's Council on Volunteers, a board member for the Council on Governance, chairman of Council on Hospital Governance, a Trustee representative, a member of Friends of Tennessee Hospitals, and a member of the THA Board of Directors.

For the AHA, Mrs. Brown has served as a delegate to the Congress of Hospital Trustees, Region IV chairman for the Congress of Hospitals, on the Committee on Allied Relations, and on the AHA Health Care Reform Task Force. She has served on the Editorial Advisory Board for Trustee magazine, on the Regional Policy Board as a Trustee delegate, on the AHA Committee on Governance, and as the key contact for the AHA Partnership for Action Committee.

In her Sullivan County community, Mrs. Brown is an active fund raiser for the American Cancer Society, the American Heart Association, the American Lung Association, and the Easter Seal Society. She is a founding member of the volunteer program at Life Care Center, an extended care facility. She also serves on the Greene Valley Developmental Center Advisory Committee, a governor-appointed position, and on the Board of Directors of the Helping Hands Agency for Mentally Retarded and Handicapped.

Edward McClarty of Shelbyville is a major force in the development and continued operation of the Ronald McDonald House in Nashville. During the time he owned and operated a McDonald's franchise in Shelbyville, he served as president of the Middle Tennessee and Southern Kentucky McDonald's Co-Op and spearheaded a record-setting $60,000 fund raising campaign for the Ronald McDonald House in Nashville. Mr. McClarty became the first board member of the Nashville house as well as one of the first two legal names to sign the document establishing Nashville's Ronald McDonald House. He continues to serve as a member of the advisory board.

In his community of Shelbyville, Mr. McClarty has served as Sunday School Superintendent, is a past deacon for First Presbyterian Church, and drives the church van. He also has served as a board member of the Community Day Care Center. He is the past president and current board member of the Shelbyville-Bedford County Chamber of Commerce, past-president of the Shelbyville Rotary Club, and served as a board member of CORVA, a group that attempted to regulate insurance and benefits more than 20 years ago.

An active teacher of magic, Mr. McClarty is past-president of the Middle Tennessee Magicians Club and he also served as vice-president of the Brotherhood of Magicians International. He has served as a magician for the Ronald McDonald House for more than 15 years. He first performed as a magician for the Ronald McDonald House in Detroit.

Mr. McClarty is a 20-year survivor of colon cancer who has visited hospital patients preparing for abdomino-perineal repair and an ileostomy. He served on the state board of the American Cancer Society for six years and is involved locally in fund raising for the society as a participant in musicals known as "Hee Haw Howdy" and "Memories." He also has served as Master of Ceremonies for leukemia fund raisers.

The Metropolitan Inter-Faith Association (MIFA) of Memphis is a 26-year-old unique, independent interfaith organization that delivers critical services to more than 8,000 people each day. People of all ages, races, backgrounds, and faiths work together to secure the basic and critical human needs of food, clothing, shelter, independence, and hope to the greater Memphis community. MIFA operates 32 various programs, 37 homes, and 60 vehicles, with the assistance of 2,000 volunteers and a full-time staff of 110 people.

To help the isolated homebound elderly community of Memphis that has an annual income below $10,000, MIFA serves more than 3,000 hot lunches daily, Monday through Friday. To serve other needs of homebound seniors, MIFA has organized programs such as Caregivers, Senior Companion, Case Management, Handyman, Lunch & Learn, RSVP, MIFA Senior Centers, and Active Times. These services, support groups, home visits, education, and socialization activities keep the seniors in the Memphis community vitally active.

MIFA also has created programs such as "Grandma, Please!" to help the children of the Memphis community. In the last three years, more than 25,000 calls from children have been received by volunteers who serve as listening ears for children who are home alone, facing new situations, or simply feeling lonely. Through MIFA, these children have the reassurance of a caring, well-trained adult friend. MIFA also publishes a free bimonthly newspaper called *Memphis Parent* which provides local information, parenting ideas, and analysis to about 33,000 parents from all walks of life.

Because of its unique scope, efficiency, and collaborative nature, MIFA is a very effective organization and has been able to occupy a vital niche in the Memphis community.

Allie J. Prescott, III, Executive Director for MIFA, accepted the award.

TENNESSEE'S OUTSTANDING PHYSICIAN OF THE YEAR

The TMA House of Delegates elected David T. Dodd, M.D., of Murfreesboro as the 1995 Outstanding Physician of the Year at the 160th TMA annual meeting in Nashville.

David T. Dodd, M.D.

David T. Dodd, M.D., a long-time general surgeon in Murfreesboro, is the medical director of the Tennessee Medical Foundation's (TMF) Impaired Physician Program, a rehabilitation program to help physicians with chemical dependency or mental impairment. He was cited for his "lifelong devotion to improving the quality of individual lives, first as a superb surgeon and currently as the medical director of the TMF Impaired Physician Program."

Since 1983, Dr. Dodd has been the full-time director of the TMF Impaired Physician Program. Under his direction, the program has helped approximately 800 physicians and other health care professionals regain control of their lives and careers through the process of intervention and rehabilitation for the treatment of chemical dependency and other types of impairment. Of these 800 interventions, 620 have completed treatment with a 95 percent rate of re-entry to medical practice.

When time allows, Dr. Dodd regularly educates nonmedical groups on chemical dependency rehabilitation. Also, he serves as an informal advisor to the Tennessee Board of Medical Examiners, and teaches monthly loss prevention classes for the largest medical malpractice insurance company in the state.

Dr. Dodd, who personally has helped hundreds of physicians with dependency and psychological problems, has started working with other health care and professional associations to help them establish peer-to-peer assistance programs similar to Tennessee's nationally recognized program. Currently he serves as consultant to the University of Tennessee College of Medicine AIMS Program, Charter Lakeside Hospital in Memphis, Quillen College of Medicine AIMS Program, and the state medical associations of Texas, Mississippi, Alabama, and Kentucky.

Born in Smyrna, Tennessee, Dr. Dodd, 67, received his undergraduate degree from Middle Tennessee State University prior to completing medical school at the University of Tennessee College of Medicine, Memphis in 1953. He completed his internal medicine residency training in Nashville at Thayer Veterans Administration Hospital and Vanderbilt University in 1955, and he completed a five-year general surgery residency at the University of Tennessee and City of Memphis Hospital, serving as chief resident in 1961.

Dr. Dodd is certified by the American Board of Surgery, American Society of Addition Medicine, and California Society for Treatment of Alcoholism & Other Drug Dependencies.

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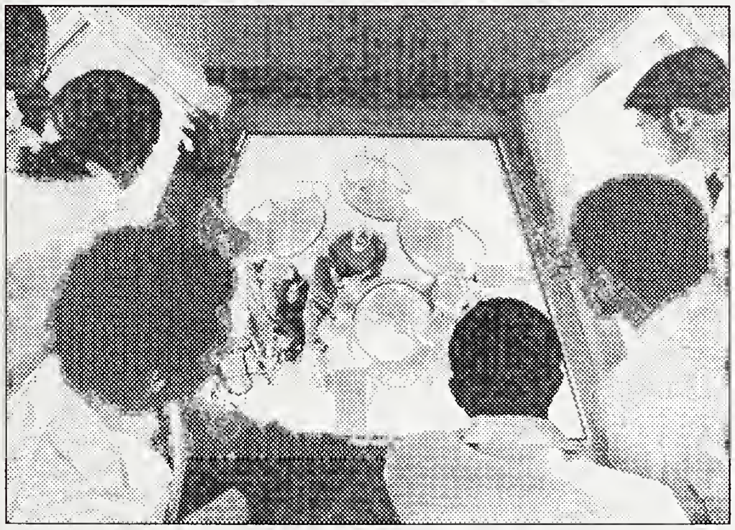
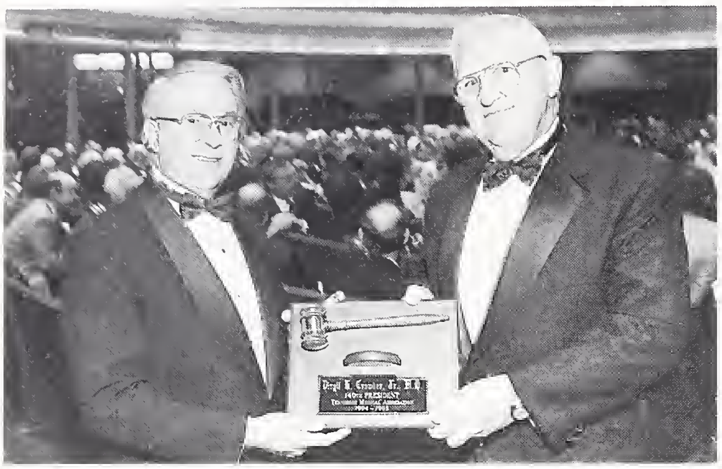


MEDICINE ON STAGE

TMA Annual Meeting Highlights—Nashville—April, 1995

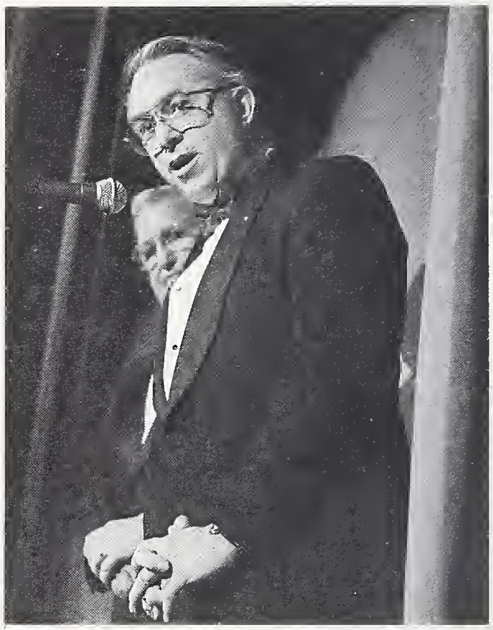


Incoming president Dr. Robert E. Bowers, Chattanooga (left), presents the traditional gavel to outgoing president Dr. Virgil H. Crowder, Jr., Lawrenceburg, to honor his service as TMA's 140th president.

IMPACT Luncheon speaker M. Lee Smith, noted Tennessee political analyst.

Medicine and Religion Breakfast speaker Rev. Walter Harrelson.

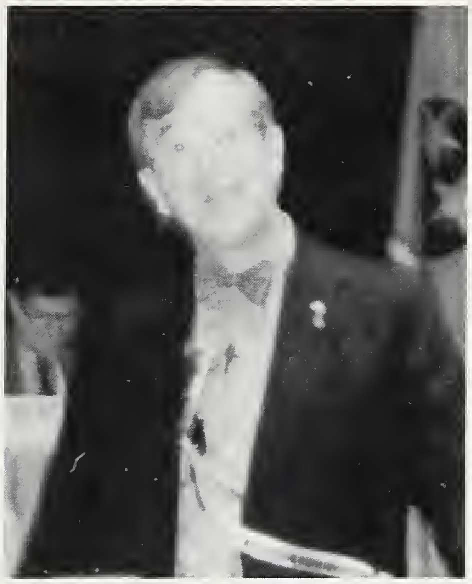
Dr. and Mrs. Robert E. Bowers and Dr. and Mrs. Virgil H. Crowder enjoy the President's evening at the historic Ryman Auditorium.



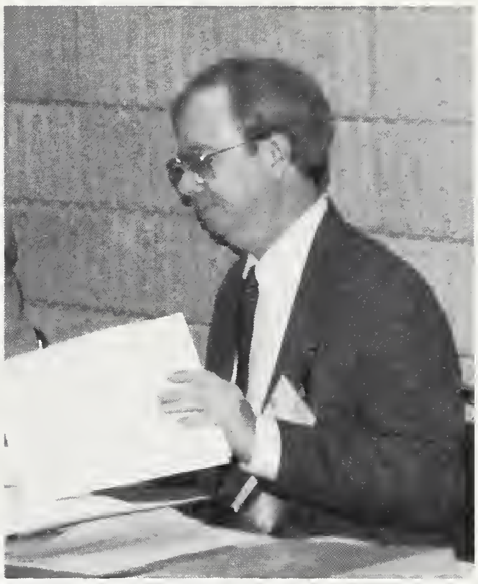
Incoming president Dr. Bowers addresses guests at "Medicine on Stage."

TMA Past Presidents attending the annual breakfast in their honor.

Newly elected president-elect Dr. Richard M. Pearson, Memphis.



Dr. Daniel "Stormy" Johnson, speaker of the AMA House of Delegates, addressing the TMA House.



Incoming TMA Board chairman Dr. Charles T. Womack, Cookeville.

EXTENSION OF KNOWLEDGE • ADVANCEMENT OF SCIENCE
MEDICAL
TENNESSEE
ASSOCIATION

Dr. Thurman L. Pedigo, Nashville, speaker of the House, Dr. Robert D. Kirkpatrick, Memphis, vice-speaker of the House (front row), and the TMA Executive Committee (back row) prepare for the opening session of the House.

Donald H. Alexander, TMA's new CEO, congratulates L. Hadley Williams, who retired after serving TMA for 32 years.

Physicians take time to view the photo exhibit, "Living With the Enemy." Unveiled at the meeting, the exhibit is part of TMA's Domestc Violence Awareness Program and will tour the state this fall.

1995 TMA ANNUAL MEETING — HOUSE OF DELEGATES COMPOSITION
FIRST SESSION: APRIL 6 — SECOND SESSION: APRIL 9

EX-OFFICIO MEMBERS

OFFICERS

		First Session	Second Session
President	Virgil H. Crowder, Jr., M.D.	Present	Present
President-Elect	Robert E. Bowers, M.D.	Present	Present
Vice-President	Robert C. Patton, M.D.	Present	Present
Vice-President	Warren F. McPherson, M.D.	Present	Present
Vice-President	Neal S. Beckford, M.D.	Present	Present

BOARD OF TRUSTEES

	First Session	Second Session
David K. Garriott, M.D.	Present	Present
David G. Gerkin, M.D., Chairman	Present	Present
Robert D. Kirkpatrick, M.D.	Present	Present
Michael A. McAdoo, M.D.	Present	Present
Hays Mitchell, M.D., Sec/Treas	Present	—
Ronald E. Overfield, M.D.	Present	Present
Richard M. Pearson, M.D.	Present	Present
Thurman L. Pedigo, M.D.	Present	Present
Barrett F. Rosen, M.D., Vice-Chairman	Present	Present
Charles W. White, M.D.	Present	Present
Charles T. Womack, M.D.	Present	Present
Phillip E. Wright, II, M.D.	Present	Present

COUNCILORS

		First Session	Second Session
1st District	Jere W. Ferguson, M.D.	—	Present
2nd District	John E. DePersio, M.D.	Present	Present
3rd District	Walter D. Parkhurst, M.D.	—	—
4th District	A. Austin Jones, M.D.	—	—
5th District	Theresa T. Morrison, M.D.	—	—
6th District	H. Victor Braren, M.D.	—	—
7th District	Malcolm A. Cox, M.D.	Present	Present
8th District	James D. King, M.D.	Present	Present
9th District	John W. Hale, M.D.	Present	Present
10th District	Patrick J. Murphy, M.D.	—	—

AMA DELEGATES

	First Session	Second Session
Charles Ed Allen, M.D.	Present	Present
Thomas K. Ballard, M.D.	Present	Present
John S. Derryberry, M.D.	Present	Present
Hamel B. Eason, M.D., Vice-Chairman	Present	Present
Allen S. Edmonson, M.D.	Present	Present
John B. Thomison, M.D., Chairman	Present	Present

PAST PRESIDENT OF AMA

	First Session	Second Session
Tom E. Nesbitt, M.D.	Present	Present

PAST PRESIDENTS OF TMA

	First Session	Second Session
John H. Burkhart, M.D.	Present	Present
Francis H. Cole, M.D.	Present	—
J. Kelley Avery, M.D.	—	Present
David H. Turner, M.D.	Present	Present
John B. Dorian, M.D.	Present	Present
George A. Zirkle, Jr., M.D.	Present	Present
Clarence R. Sanders, M.D.	Present	Present
James R. Royal, M.D.	Present	Present
James T. Galyon, M.D.	Present	Present
Howard L. Salyer, M.D.	Present	—

DELEGATES

EAST TENNESSEE GRAND DIVISION

County/Component Society		First Session	Second Session
BLOUNT	John J. Ingram, III, M.D.	Present	Present
	Robert D. Proffitt, M.D.	Present	Present
BRADLEY	Nancy M. Blank, M.D.	Present	Present
	Stephen W. Jackson, M.D.	Present	Present
CAMPBELL	L.J. Seargeant, Jr., M.D.	Present	—
CARTER	Scott O. Caudle, M.D.	—	Present
CHATTANOOGA-HAMILTON	L. Diane Allen, M.D.	—	—
	Ronald C. Brooksbank, M.D.	—	—
	Channappa Chandra, M.D.	—	Present
	William C. Greer, M.D.	Present	Present
	Donna K. Hobgood, M.D.	Present	Present
	Gary R. Lanham, M.D.	Present	Present
	John W. McCravey, M.D.	—	Present
	Frank J. Miller, M.D.	—	Present
	Andrew B. Rittenberry, Jr., M.D.	Present	—
	William E. Rowe, M.D.	—	—
	Molly R. Seal, M.D.	Present	Present
	Sam J. Williams, III, M.D.	Present	Present
COCKE	Edward W. Capparelli, M.D.	Present	Present
CUMBERLAND	Robert Nichols, M.D.	Present	Present
GREENE	John C. Boys, M.D.	—	—
	Michael H. Hartsell, M.D.	—	—
HAWKINS	Charles D. Huffman, M.D.	Present	Present
KNOXVILLE ACADEMY	H. Grady Arnold, Jr., M.D.	—	—
	Charles F. Barnett, M.D.	Present	—
	John L. Bell, M.D.	Present	Present
	Leon J. Bogartz, M.D.	—	—
	John M. Burkhart, M.D.	Present	Present
	Peter W. Carter, M.D.	—	—
	Michael D. Kropalik, M.D.	Present	Present
	John W. Lacey, III, M.D.	Present	Present
	M. Douglas Leahy, M.D.	—	—
	William R. McKissick, M.D.	Present	Present
	Robert N. Montgomery, M.D.	Present	Present
	J. David Owen, M.D.	—	—
	F. Neal Peebles, M.D.	—	—
	Laura B. Powers, M.D.	Present	Present
	John R. Semmer, M.D.	Present	Present
LAKEWAY	C. Cole Anderson, M.D.	—	—
	Charles S. Fulk, M.D.	—	Present
MCMINN	C. Richard Sharpe, M.D.	—	—
MONROE	Eric A. DeFreitas, M.D.	Present	Present
ROANE-ANDERSON	A. Julian Ahler, M.D.	Present	—
	Robert R. Casey, M.D.	Present	—
	Thomas L. Clary, M.D.	—	—
SCOTT			
SEVIER	Vincent B. Tolley, M.D.	—	—
SULLIVAN	David R. Ginn, M.D.	Present	Present
	William H. Johnstone, M.D.	—	—
	Thomas E. Mitoraj, M.D.	Present	Present
	L. Dow Strader, M.D.	Present	Present
	Larry H. Westerfield, M.D.	Present	Present
	Robert H. Williams, M.D.	Present	Present
WASHINGTON-UNICOI-JOHNSON	David S. Archie, M.D.	—	—
	Burgin E. Dossett, Jr., M.D.	Present	Present
	Clarence E. Goulding, Jr., M.D.	Present	Present
	D. Phil Roe, M.D.	—	—
	James M. Wilson, M.D.	Present	Present
YOUNG PHYSICIAN SECTION	Tara Sturdivant, M.D.	Present	Present

MIDDLE TENNESSEE GRAND DIVISION

County/Component Society		First Session	Second Session
BEDFORD			
BENTON-HUMPHREYS	Subhi D. Ali, M.D.	Present	Present
BUFFALO RIVER VALLEY*			
COFFEE	Charles H. Webb, M.D.	Present	Present
DEKALB	Melvin L. Blevins, M.D.	—	—
DICKSON	Jeffrey S. Gordon, M.D.	—	—
FENTRESS			
FRANKLIN	Kenneth G. Becker, M.D.	Present	Present
GILES			
JACKSON	Gregory L. Byrne, M.D.	Present	—
LAWRENCE	Lilia D. Mauricio, M.D.	Present	—
LINCOLN	Fred Ralston, Jr., M.D.	Present	Present
MACON*			
MARSHALL	Kenneth Phelps, Jr., M.D.	—	—
MAURY	Thomas R. Duncan, M.D.	Present	Present
	James C. King, M.D.	Present	Present
MONTGOMERY	O. Sam Luton, M.D.	Present	Present
	W. Joel Pedigo, Jr., M.D.	Present	Present
NASHVILLE ACADEMY	John B. Bond, M.D.	Present	Present
	Glenn S. Buckspan, M.D.	Present	—
	Robert S. Collins, M.D.	Present	Present
	Richard J. Davis, M.D.	Present	—
	B. Stephens Dudley, M.D.	—	—
	Karen B. Duffy, M.D.	Present	Present
	David N. Dyer, M.D.	Present	Present
	Roy O. Elam, III, M.D.	Present	Present
	Mark C. Houston, M.D.	—	Present
	John C. Frist, Jr., M.D.	Present	—
	Perry F. Harris, M.D.	—	—
	William B. Harwell, Jr., M.D.	Present	Present
	James M. High, M.D.	Present	Present
	John E. Keyser, III, M.D.	—	—
	John W. Lamb, M.D.	Present	Present
	Dana L. Latour, M.D.	—	Present
	Russell B. Leftwich, M.D.	—	—
	Malcolm R. Lewis, M.D.	Present	Present
	David E. McKee, M.D.	Present	Present
	Ann H. Price, M.D.	Present	Present
	Ronald E. Pruitt, M.D.	—	Present
	William B. Ralph, Jr., M.D.	—	—
	Murray W. Smith, M.D.	Present	Present
	K. Shannon Tilley, M.D.	Present	—
	John J. Warner, M.D.	Present	Present
	Ralph E. Wesley, M.D.	—	—
	Christine Sharis (Student Delegate)	Present	—
OVERTON	W.G. Quarles, Jr., M.D.	Present	Present
PUTNAM	Charles E. Jordan, III, MD	Present	Present
	Randall Gary Samples, M.D.	Present	Present
ROBERTSON*			
RUTHERFORD/STONES RIVER	George Eckles, M.D.	Present	Present
	Robert P. Ingle, M.D.	—	—
	Olin Williams, M.D.	Present	—
SMITH	Hugh E. Green, M.D.	Present	Present
SUMNER	Lloyd T. Brown, M.D.	Present	Present
	Ted W. Hill, M.D.	—	—
WARREN	Wendall V. McAbee, M.D.	—	—
WHITE	Chet M. Gentry, M.D.	Present	Present
WILLIAMSON	Starling C. Evins, M.D.	Present	Present
	Joseph L. Willoughby, M.D.	Present	Present
WILSON	James C. Bradshaw, Jr., M.D.	Present	Present
YOUNG PHYSICIAN SECTION	Steven G. Flatt, M.D.	Present	Present

WEST TENNESSEE GRAND DIVISION

County/Component Society		First Session	Second Session
CONSOLIDATED	James T. Craig, Jr., M.D.	Present	Present
	James H. Donnell, M.D.	Present	Present
	Oscar M. McCallum, M.D.	Present	Present
	John H. Meriwether, M.D.	Present	Present
	James Tyler Swindle, M.D.	—	—
	Robert A. Vegors, M.D.	Present	Present
HARDIN	John D. Lay, M.D.	Present	Present
HENRY			
MEMPHIS-SHELBY	Joe P. Anderson, M.D.	Present	Present
	Joseph A. Blythe, III, M.D.	Present	Present
	Allen S. Boyd, Jr., M.D.	Present	Present
	Ann D. Brown, M.D.	—	—
	F. Hammond Cole, Jr., M.D.	Present	Present
	Arnold M. Drake, M.D.	Present	Present
	Nicholas G. Economides, M.D.	—	—
	J. Chris Fleming, M.D.	Present	Present
	George S. Flinn, Jr., M.D.	—	—
	Hugh Francis, III, M.D.	Present	Present
	Jerre M. Freeman, M.D.	—	Present
	Charles R. Handorf, M.D.	Present	Present
	C. Eugene Jabbour, M.D.	—	Present
	James Gibb Johnson, M.D.	Present	—
	Mack A. Land, M.D.	Present	Present
	Myron Lewis, M.D.	—	—
	William L. Moffatt, III, M.D.	—	—
	Evelyn B. Ogle, M.D.	Present	Present
	Phil E. Orpet, Jr., M.D.	—	Present
	Phillip A. Pedigo, M.D.	Present	Present
	William C. Threlkeld, M.D.	Present	Present
	J. Jeremiah Upshaw, M.D.	—	—
	Otis S. Warr, III, M.D.	Present	Present
	Charles E. White, M.D.	Present	Present
	Jesse C. Woodall, Jr., M.D.	Present	Present
NORTHWEST TENNESSEE	Hobart H. Beale, M.D.	Present	—
	James William Shore, M.D.	Present	Present
TIPTON	Warren A. Alexander, M.D.	Present	Present
YOUNG PHYSICIAN SECTION	James T. Batey, M.D.	Present	Present

Ex-Officio delegates serving in more than one capacity are listed only once. The above information was taken from attendance records signed by the delegates.

*The following component society delegates were not eligible for seating due to failure to file the 1994 annual report as required by the TMA Constitution and Bylaws: Buffalo River Valley, Macon, Robertson.

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REPORTS OF OFFICERS

Report of the President

Virgil H. Crowder, Jr., M.D.

I want to thank the members of the Association for the opportunity to serve as your president. The year has passed quickly and I am sorry that I have not had the chance to visit more of the local societies. I really appreciate the support of the Lawrence County Medical Society who nominated me and covered for me in the times I was out of town on Association business.

The year has been marked with both highs and lows for our Association. TennCare and its multitude of problems have hampered the Association's progress by using vast amounts of staff time and pushing the Association financially with the cost of the lawsuit. The Association was forced into the lawsuit against the state by the refusal of the administration to discuss the physicians' problems with a flawed plan that placed great risk on the physicians. Reimbursement problems were only a small part of our concerns. We are now in the appellate phase and may have a ruling by June.

As a result of our failures to improve TennCare, physicians became active in the political process and TennCare's problems were discussed widely this fall. The election of a new governor and his approach to management have brought new hope. The leadership of TMA has met with Mr. Corker, Commissioner of Finance and Administration in the Sundquist cabinet. I feel that physicians will have a seat at the roundtable and its subcommittees, which will try to correct the many problems of TennCare. Changes will be slow, but I am hopeful that we will end up with a plan that provides care for the indigent population in a manner that physicians can support and help mold into its proper size and direction.

The Board of Trustees has my deep admiration and thanks for handling many diverse problems which could have been divisive. The hours spent by the Board on our behalf is never fully appreciated. The work of the Board completed the long range plan of the Association and launched our new Domestic Violence Program.

I want to thank the staff of the TMA for its extra-mile efforts which made my job easier. The leadership of Mr. Don Alexander and Mr. Hadley Williams is well known to all of us. I want to wish the best for Hadley in his retirement and thank him for the manner in which he planned and supported the transition period of the executive director.

In reflecting on the status of our Association, I see two major areas we need to continue to work on. First is participation by the membership. The TMA is the only voice in the state that truly represents all physicians. We need physicians of all specialties and all areas of the state to join in our push to be advocates for the patients we treat. We need all delegates present and seated in the House of Delegates and they need to discuss fully the problems faced by physicians today.

Second is our need to have our committees manned by interested physicians from all parts of the state. The Board started this difficult task but it will only be hastened when we realize that no physician should serve on more than one committee at any one time. We have many capable physicians across the state who could and would serve if called upon. The proof of the process is demonstrated by the Board of Trustees which turns over every three years and has no loss of function.

In closing, I would hope that you will enjoy and benefit from the new format of our meeting. Mr. John Grant and the Annual Meeting Committee have worked hard to improve the meeting and reverse the declining attendance we have been noting. I want to thank you again for the past year, for your support, and for your friendship.

REFERENCE COMMITTEE C—*reviewed the report of the president and recommended that it be filed.*

ACTION: **FILED**

Report of the Board of Trustees

David G. Gerkin, M.D., *Chairman*

Volunteer leadership and their goal is usually driven 50% by ego, that is of the appropriate kind, the drive to succeed at any task, 25% by inspiration whatever that means, and 25% by actual work. I can tell you that your volunteer Board of Trustees has more than reversed this ratio with countless hours of work, great inspiration, leadership, and the ability to temper their egos to deal effectively with both friends and foes. I cannot thank your Board of Trustees and administrative staff enough for their commitment to the advancement of quality health care and for the critical support of physicians to allow them the ability to practice quality medicine.

We have been confronted by numerous hurdles and have met them head-on with great successes and some disappointments. However, even with the disappointments, we have stayed the course of what is right. There was never an attempt to destroy the TennCare Program, as thought by many, but there has been a constant struggle to improve and make the program an effective health care instrument for the citizens of Tennessee. We have filed an appeal to the appellate courts to reverse the chancellor's adverse ruling. We have spent countless hours meeting with the past administration and more recently, with the new administration, to bring the appropriate issues forth and become part of a forum to solve this terrible dilemma.

We have encountered the legislative arena once again with its numerous challenges and obstacles. We have had unforeseen changes in staffing, and with our administrative leadership, along with incredible support of the members of the Association, are filling the gap and making a real difference in effective legislative involvement. The Legislature has been amazed at our organization's commitment, knowledge of, and the ability to deliver on the issues. I thank the Board of Trustees, the administrative staff, and especially the members for this overwhelming support.

I used to say frequently, speaking of the leadership of organized medicine, "Never have so few, done so much for so many." This is no longer true, for the membership of the Tennessee Medical Association and its component societies have stood the test. They have supported the lawsuit both by voice and by financial support, they have written thousands of letters, made numerous phone calls, and have become an involved organization. I think this involvement will continue far into the future and will give support to the Tennessee Medical Association and its goals. I have had numerous letters and many phone calls, some indicating support and some with constructive criticism. We have taken these to heart and attempted to do our best for the Association. Your Board of Trustees, the administrative staff, and I are truly grateful for your involvement.

A great era in the great tradition of excellence of the Tennessee Medical Association is ending. Your Chief Executive Officer L. Hadley Williams is retiring and leaving a legacy that will be extremely difficult to equal. His leadership, dedication, and wisdom has continuously and tirelessly served this Association, as is witnessed by growth and success. In January of this year, the home of the Tennessee Medical Association was paid off and is now unencumbered, thanks to Hadley's leadership and foresight. In addition, his smooth transition of leadership to your Executive Director Don Alexander has taken place, securing once again the future of this Association. Both the Board of Trustees and I give Mr. Williams heartfelt thanks for his untiring dedication to the Tennessee Medical Association and its ideals.

Serving you, the Board of Trustees and the administrative staff, has been a great pleasure to me, and I will continue with untiring work for this great organization. I also want to thank your President, Virgil Crowder, for his outstanding leadership.

Addendum A

Bylaw Amendment No. 1-94

Subject: Standing Committee Member Terms.

Action: The Board of Trustees in making its committee appointments for 1995-96 used the new term limits when making such appointments. The Board took into consideration that any current committee member whose term was yet to expire would not be affected by this policy until such time of the expiration of the current term.

Constitutional Amendment No. 1-93

Subject: Amendment by Substitution of Constitution and Bylaws of the Tennessee Medical Association.

Action: This substantial amendment was adopted April 14, 1994. The completely revised Constitution and Bylaws was published in the August, 1994 issue of the *Journal of the Tennessee Medical Association.*

Resolution No. 2-94

Subject: Mandatory Auto Safety Belt Usage. (Reaffirmation of Resolution No. 2-87)

Action: By publication of the resolution in the June issue of the *Journal of the Tennessee Medical Association*, the membership was advised and encouraged to continue to authorize exemption for patients only in those instances where the safety considerations afforded by seat belt usage are outweighed by the appropriateness of restraints in relation to the patient's physical handicap.

Resolution No. 3-94

Subject: Reaffirmation of Peer Review Guidelines. (Reaffirmation of Resolution No. 3-87)

Action: This resolution was adopted by unanimous consent April 14, 1994, and required the TMA to refuse requests by third party payors to have the Peer Review Committee review their claims against physicians when those involved a carrier prejudging the appropriateness of services rendered, or where the carrier issued inflammatory statements to the patient about a physician's care. As required by the resolution, the Peer Review Committee stands ready to act as a mediator with physicians, patients, and insurance carriers.

Resolution No. 4-94

Subject: Opposition to Fee Splitting. (Reaffirmation of Resolution No. 4-87)

Action: This resolution was adopted by unanimous consent April 14, 1994, and required that the TMA remain committed to fighting the illegal practice of fee splitting. The TMA continued to take this stand through both the 1994 and 1995 sessions of the General Assembly. Member physicians were reminded of this stance by regular publication of the Legistat.

Resolution No. 5-94

Subject: Potentially Unethical Contracts. (Reaffirmation of Resolution No. 5-87)

Action: This resolution reaffirmed AMA ethical pronouncements on self-referral issues. TMA physicians have been warned, both through ongoing Association publications, and in the TennCare contract reviews, that they ought not to place themselves in unethical situations where their financial interests in patient referrals affect their independent medical judgment. This resolution buttresses TMA's support of Tennessee's prohibition on self-referral arrangements, a law which becomes fully effective July 1, 1995. The TMA Legislative Committee has had filed, and is pursuing, a bill to expand the prohibition to all health care practitioners.

Resolution No. 6-94

Subject: Ban on Sale and Use of Tobacco in Hospitals. (Reaffirmation of Resolution No. 15-87)

Action: By publication of the resolution in the June 1994 issue of *Journal of the Tennessee Medical Association,* the membership was advised that the Association continues to urge all hospitals in the state to ban the sale and use of tobacco in hospitals.

Resolution No. 7-94

Subject: Mandatory A.M. Admissions. (Reaffirmation of Resolution No. 18-87)

Action: By publication of the resolution in the June 1994 issue of the *Journal of the Tennessee Medical Association*, the TMA will continue to work with the hospitals and Department of Insurance, in making this position known.

Resolution No. 8-94

Subject: Reentry Assistance Needed by Impaired Physicians. (Reaffirmation of Resolution No. 26-87)

Action: This resolution called upon the TMA to continue vigorously supporting the TMF Impaired Physician Program, and to buttress the Impaired Physician Peer Review Committee's efforts to reenter physicians in recovery to full medical practice. The TMA has continued such efforts in earnest.

Resolution No. 9-94

Subject: Indigent Care—Medical Home—Volunteerism. (Reaffirmation of Resolution No. 27-87)

Action: The resolution calls for selected committees, component medical societies, local and regional governmental agencies, etc. to work in concert in an effort to continue the practice of establishing "medical home" rosters of volunteer physicians across the state, and is progressing satisfactorily at the present.

Substitute Resolution No. 10-94

Subject: Membership for Osteopaths.

Action: This resolution called upon the Committee on Constitution and Bylaws to draft an appropriate Bylaw amendment that, if approved by a two-thirds vote of the 1995 House of Delegates, would allow doctors of osteopathy to join the TMA as full members. The committee drafted the amendment and it has been filed for consideration by the House of Delegates as Bylaw Amendment No. 2-95.

Resolution No. 11-94

Subject: Infectious Diseases and Immunization.

Action: The work of the TMA Infectious Diseases Committee in ongoing in relation to the numerous initiatives called for by this resolution. The committee worked diligently to encourage the (then) McWherter administration to insure adequate funding for the Department of Health's Tuberculosis control program. The committee informed the Governor of TMA's endorsement of the seven goals for state tuberculosis control programs and the recommendations of the Centers for Disease Control and Prevention's Advisory Council for the Elimination of Tuberculosis. The TMA Infectious Diseases Committee continues working to improve Tennessee's immunization rates. The committee has formally requested the assistance and cooperation of the TMA CARE program in disseminating appropriate immunization information to all primary care physicians in the state.

Resolution No. 12-94

Subject: Repeal of Privilege Tax for Retired Physicians.

Action: This resolution required the TMA to pursue passage of legislation that would repeal the $200 privilege tax for retired physicians who continued to work as volunteers on a part-time basis in charitable ventures. Legislation was submitted in the 1995 General Assembly and the TMA is actively supporting the bill.

Resolution No. 13-94

Subject: Uniform Membership Application Form. This resolution called for the TMA to draft and adopt a uniform membership application to be used for membership in all of TMA's 51 component societies.

Action: The uniform membership application was drafted, approved by the TMA membership committee, and has been used by 47 of the 51 component societies since May of 1994.

Resolution No. 14-94

Subject: Extension of Countersignature Requirement for Verbal Orders in Long-Term Care Facilities.

Action: The Committee on Legislation is working with the Tennessee Health Care Association to accomplish the intent of Resolution No. 11-94.

Substitute Resolution No. 16-94

Subject: Smoke-Free Environment in Tennessee.

Action: The TMA supports all legislation in the Tennessee General Assembly that will strengthen current laws restricting minors' access to tobacco products and the repeal of local legislation that relates to tobacco issues. Further, the TMA's meetings have all been publicized as being smoke-free meetings.

Resolution No. 17-94

Subject: Young Physician Section Alternate Delegates. This resolution called for the TMA Committee on Constitution and Bylaws to make the necessary Bylaw changes to allow the TMA chairman of the Board of Trustees, with advise from the chair of the young physician section, to appoint replacement alternate delegates to the TMA annual meeting and to the American Medical Association-Young Physician Section meetings if the need arises.

Action: The Bylaw changes have been drafted and will go before the TMA House of Delegates in April 1995.

Resolution No. 18-94

Subject: Tennessee Tobacco Alternatives Assistance Foundation.

Action: The Board of Trustees heard reports in July and October regarding the potential for establishing a tobacco alternative assistance foundation. A survey of other tobacco producing states was conducted and it was determined that there was no one at present pursuing a similar foundation. Also, meetings were held with the Tennessee Farm Bureau, and while the Bureau was not totally opposed to the concept, they did indicate that there would not be any other legal cash crop that could be put into place as an alternative. The Board of Trustees was of the opinion the Association was not in a financial position to pursue the formation of this newly created not-for- profit organization to carry out the concept of Resolution No. 18-94.

Resolution No. 19-94

Subject: Preventing Infections of Escherichia Coli, Strain 0157:H7.

Action: The Tennessee Department of Health has made diagnoses of E. coli 0157:H7 infections a reportable condition. As such, any physician in Tennessee making such a diagnosis is required by law to report it to the state. The Infectious Diseases Committee is working to collect additional information on E. coli 0157:H7 infection so that appropriate information can be provided to key state organizations representing the food service and food handling industries.

Resolution No. 20-94

Subject: Physicians for Public Service.

Action: The TMA Board of Trustees referred this resolution to the IMPACT Board of Directors and encouraged them to look into a program entitled "Physicians for Congress." IMPACT Board of Directors, in concert with AMPAC, reviewed such a concept, and are continuing to study it for future implementation.

Resolution No. 21-94

Subject: Political Campaign Education.

Action: A program entitled "Leadership Development Seminar—Do Medicine and Politics Mix?: Medical Families on the Campaign Trail" is part of the 1995 annual meeting. This program will be conducted on Saturday, April 8, 1995 from 1:30 PM to 3:30 PM. Physician members and their spouses interested in campaigning or running for office are encouraged to attend this program.

Substitute Resolution No. 22-94

Subject: Medical Malpractice Defendants Before State Board of Medical Examiners.

Action: This resolution called upon the TMA Board of Trustees to work with the Board of Medical Examiners and the Tennessee Department of Health to develop appropriate regulations or legislation, if necessary, to prohibit the practice of patients filing complaints with the licensing board as a means of gaining free discovery for their ongoing malpractice cases. The Board of Trustees will take up this matter in 1995 now that there is a new administration that is friendlier to medicine's interests. In 1994, every TMA legislative initiative was shot down by the democratic administration because of TMA's position on TennCare and its ongoing litigation with the State over the Medicaid reform demonstration project.

Resolution No. 23-94

Subject: Statewide Physician Network.

Action: The TMA Physician's Resource Network, Inc. pursued the concept of a statewide physician network throughout 1994 and 1995. A concept with a consultant company was discussed, however, no contract could be reached through negotiations. The TMA/PRN is of the opinion that the most viable type of physician organization in Tennessee would be an IPA/HMO model. In December 1994, the TMA membership was surveyed regarding such an IPA/HMO model, and the results were inconclusive. Most physicians thought it important for medicine to pursue such an organization, however, many were reluctant to commit to participating in financing of such an endeavor. The TMA/PRN continues to review the potential for such an organization for physicians in Tennessee.

Resolution No. 24-94

Subject: Medical Practice Mini-Internships for TMA Staff.

Action: Mini-Internships for TMA staff were considered and were to be sponsored by the metropolitan medical societies who operate such mini-internship programs. Many of the staff were to participate in the Chattanooga program, however, with the departure of their executive director, a new plan will have to be put into place for 1995. TMA staff is anxious to participate in such mini-internships and plans to do so in the year 1995.

Resolution No. 26-94

Subject: Component Society Orientation at TMA Headquarters.

Action: Rather than conduct a separate orientation at the TMA headquarters for component societies and their leaders, the TMA 1995 Leadership Summit devoted an entire morning for such an orientation. Many component societies, TMA Alliance, and specialty society leaders were in attendance at the orientation. The evaluations of those attending the program were very worthwhile and beneficial and encouraged the TMA to continue this type of format periodically.

Resolution No. 27-94

Subject: Emergency Care of Managed Care Organization Patients.

Action: The TMA, through written correspondence, urged the Department of Commerce and Insurance to develop a uniform definition of emergency care. This matter was also discussed with the Tennessee Hospital Association, however at this point, there has not been any definitive action taken by the Department of Commerce and Insurance.

Substitute Resolution No. 28-94

Subject: Increased Young Physician Involvement in the Tennessee Medical Association.

Action: The TMA invited a representative of the Young Physician Section to attend each Board meeting. In addition, the Board of Trustees considered appointing young physicians to all standing and special committees for 1995-96. The Nominating Committee of the TMA was encouraged to consider young physicians in their nominating process.

Addendum B
Response to Resolution No. 3-90

In 1990 the House of Delegates approved a $100 dues increase for five years, and directed the Board of Trustees to review the entire dues structure after five years and make recommendations as to TMA's future needs. This increase enabled the Association to pay off the existing debt for the new TMA office building and its furnishings and to cover the increased cost of the operations of the Association over this time period. The loan from Third National Bank was retired in January, 1995 and the TMA office building became free from debt and will serve the Association's members for many years to come. This debt would have been retired in 1994 had it not been for $50,000 being redirected to help fund TennCare activities.

While the building debt was being retired, operation and program costs and general cost of doing business continued to increase, particularly with unanticipated costs related to TennCare.

The following review highlights the Association's current financial status and needs.

Support from TMA Physician Services, Inc.

In 1993 the TMA House of Delegates approved a $15 dues increase for the Impaired Physician Program. This increase was not borne by the individual member due to the fact that TMA Physician Services, Inc. (the for-profit subsidiary of TMA) offered to fund this increase ($75,000) for two years, and has done so for both 1994 and 1995. This negated the need to ask the membership for a dues increase before the five-year plan adopted in 1990 was completed. TMA members must now fund this approved increase.

TMA Physician Services, Inc. was created in 1985 in hopes that in future years it could become profitable to the extent that dividends could be paid to TMA. Dividends were not available until 1990 and since that time, some $800,000 has accrued to the TMA through direct dividends, advertising, rent, in-kind services, and payment of partial salary for Mr. Williams and his secretary. Without TMA Physician Services, the entire $800,000 would have been borne by TMA.

Association Reserves

The reserves of the Association have been depleted to an extremely low level. Sound association business management principles stress that a minimum of six months operating expenses should be held in reserve. Were it not for years of concerted, streamlined financial planning, the reserves would not have been available to cover most of the cost of the land purchase, construction, and furnishing of a facility to replace a deteriorating, non-functional office that had served the Association for some 35 years. Also, $100,000 of reserves were used to fund TennCare activities in 1994. Often not acknowledged is the fact that interest from reserves which previously were infused into the budget have reached an all-time low. To put it simply, when reserves are depleted it is a double hit because interest also is not available to fold back into the operating budget to help hold down the need for increasing dues.

Building Lease Income

The TMA has been successful in renting its entire 3rd floor office space which generates non-dues income. This income approximates $25 per dues paying TMA member. Were it not for this income, a dues increase would have been needed prior to now to help fund the day-to-day operations of the TMA.

Unfunded Communications Needs

In 1994, the House of Delegates referred Resolution No. 25-94 "Technological Innovation in TMA Operation" to the Board of Trustees calling for a complete study to upgrade the communications needs of the Association. This study will help plan for both internal and external updating of systems and equipment to meet the technology needs of the members in the immediate future and will get us prepared for the 21st century. While this study is only in its infant stage, the end result will likely come with a price tag of $75,000 to $100,000.

Financial Impact of TennCare

While few people anticipated TennCare and its ramifications on physicians' practices, no one could have planned for the financial impact on the Association. The TennCare lawsuit is only a portion of the extra increased burden brought on by TennCare. Even with the members responding to a voluntary assessment by contributing some $450,000, the TMA finished the 1994 fiscal year with $93,000 in unpaid legal bills that have been incurred as a result of TennCare. In addition, the appeal of the lawsuit, which was approved by the Board of Trustees, will generate even further expenses. Those bills could easily top $200,000 in the months to come. This financial drain limits any flexibility of the Association to improve or expand other valuable member services.

Loan from TMA/SEF

The TMA has accepted an offer of a loan of $100,000 from the TMA/SEF to help defray 1995 TennCare expenses. These funds are available only because of sound financial management of that program and the decline of loan applications from students in 1994 and 1995.

Summary

Presently, only $280 of the $355 annual dues are available to fund the day-to-day operations and activities of the Association. The remaining $75 has been earmarked by the House of Delegates for special programs, i.e., Student Education Fund (SEF)–$25; Impaired Physician Program (IPP)–$15; and the CARE program–$35. There is only one other state association with dues lower for 1995 than $280—that being New Mexico which is $250.

The past two years, TMA has finished the budget year with a deficit of approximately $25,000 each year. Were it not for TennCare, it can be said with confidence that we would have finished each year with a surplus.

TMA has held the line staff-wise over the past five years, adding only one new position, that being a third party reimbursement specialist who provides a direct member service by acting as an ombudsman with third party payors. No immediate additional personnel is funded since staff has been asked to take on more workload rather than add staff. Even with the pending retirement of Mr. Williams, his duties, with the exception of TMA Physician Services, Inc., have been systematically reallocated and absorbed over the past three years by existing staff.

It is safe to say that were it not for the volunteer TennCare contributions of a significant number of members as well as non-members in 1994, the TMA at this point would be looking at insolvency. However, we have reached a point that even if tomorrow a perfect world evolved, where TennCare related expenses would no longer affect our budget, we would still be one crisis away from being insolvent in that our reserves are only $500,000 or 20% of the current year's budget.

The value over the past several years of TMA Physician Services, Inc. cannot be overstated. We hope and anticipate that TMA Physician Services, Inc. will continue to be able to provide their current level of funding and subsidy. However, we cannot continue to rely on this resource to bail TMA out of dues increases.

In short, the past five years has seen incredible increase in our activities and the demands on the Association. We have reallocated dues, leaned on our for-profit subsidiary to a point that it now must rebuild its own financial base, borrowed funds from the SEF, and asked for voluntary contributions from the members.

To be a viable progressive association as we approach the next century, we must solidify our immediate financial future. A dues increase of $25 is needed to do that. Further, we desperately need the non-member physicians to join their colleagues in this effort too. Dues could actually be reduced if non-members would join us and contribute to the benefits that they are already receiving.

Conclusion

Recommendation: The Board of Trustees recommends that the TMA House of Delegates approve Resolution No. 7-95.

REFERENCE COMMITTEE C—*reviewed the report of the Board of Trustees and recommended that it be filed.*

ACTION: **FILED**

Report of the Secretary-Treasurer

HAYS MITCHELL, M.D.

The annual audit for the fiscal (and calendar) year ending December 31, 1994 has been completed and is available for review. The customary examination of the Association's records and accounts was conducted by the firm of Bellenfant and Miles, P.C., certified public accounts, appointed by the Board of Trustees.

The attached financial statements have been extracted from the complete audit. They show the revenue and expenditures during 1994 as well as the assets, liabilities, and fund balance at the end of the year. A balanced budget had been projected for 1994 with revenues and expenditures projected at $2,228,000. As indicated, however, the actual revenue was $2,821,203.26

and the actual expenditures were $2,844,867.12, which resulted in a deficit of $23,663.86.

The added expenses related to the Association's TennCare activities was the core cause of the deficit. Prudent financial management, voluntary contributions of the Association membership, other assistance from TMA Physician Services, Inc., redirection of funds by the CARE program, and use of $100,000 of our reserves prevented a much larger deficit.

The added TennCare expenses included travel and other expenses to attend and conduct TennCare meetings (including expenses to attend and conduct depositions), attorney fees, consultant fees, court reports for depositions, computer programs, and supplies, and document reproduction and postage.

Despite this unbudgeted increase in the cost of doing business related to TennCare, only $54,712 remained to be paid on the headquarters building loan as of December 31, 1994. This was paid in January 1995 and the building is now unencumbered.

I appreciate the financial acumen and wizardry of Mr. Hadley Williams and Mr. Don Alexander, the able assistance of Dr. McAdoo and Dr. Womack on the Finance Committee, as well as the cooperation and understanding extended by the Board of Trustees during 1994.

BALANCE SHEET

	Year Ended December 31	
	1994	**1993**
CURRENT ASSETS		
Cash and Cash Investments		
Operating Cash	$ 834,224	$ 806,001
Reserve Cash	500,000	604,289
Total Cash/Investments	1,334,224	1,410,290
Investment in TMA Physician Services, Inc.	1,000	1,000
Total Current Assets	1,335,224	1,411,290
Land, Building & Improvements, Equipment & Autos		
Land	876,995	876,995
Building	1,609,326	1,609,326
Tenant Improvements	120,965	120,965
Office Equipment	263,161	260,389
Automobiles	15,999	15,999
	2,886,446	2,883,674
Less Accumulated Depreciation	(491,973)	(365,860)
Land, Building & Improvements, Equipment & Autos-Net	2,394,473	2,517,814
Total Assets	$3,729,697	$3,929,104
CURRENT LIABILITIES		
Accounts Payable & Accrued Expenses	$ 17,548	$ 16,338
Dues Collection Escrow	743,079	719,029
Unearned Annual Meeting Income	9,215	13,500
CARE Program Dues Allocation Escrow		71,784
Note Payable-Third National Bank	54,596	100,000
Total Current Liabilities	824,438	920,651
Note Payable-Third National Bank		54,596
Tenant Deposits	2,000	2,000
Total Liabilities	826,438	977,247
FUND BALANCE	2,903,259	2,951,857
Total Liabilities and Fund Balance	$3,729,697	$3,929,104

STATEMENT OF REVENUE, EXPENSES, AND CHANGES IN FUND BALANCE

	Year Ended December 31	
	1994	**1993**
REVENUE		
Membership Dues	$1,774,769	$1,771,938
Annual Meeting	54,585	58,115
Journal	58,047	50,518
Investment Income	73,388	45,805
CARE Program (deferred from 1992)	73,902	
TMA Physician Services-Dividends	75,000	75,000
AMA Collection Fees	33,556	31,576
Legal Fund Assessment	489,536	
Specialty Society Administration	40,507	42,440
Rental Income	125,009	128,793
CME Programs	18,915	20,775
Law Guide	557	2,058
Mailing Labels	3,432	3,517
Total Revenue	$2,821,203	$2,230,535
EXPENSES		
General Administrative	$982,637	$874,244
Administrative Support & Services	35,117	52,040
Travel-Staff	50,988	41,440
Officers and Members	102,922	97,987
Impaired Physician Program	74,899	74,486
Committee Expense	15,890	31,260
Legislative Committee	69,571	54,303
Continuing Medical Education	10,604	8,147
Annual Meeting	62,729	54,911
Taxes	53,579	53,550
Headquarters Expense	107,311	96,867
Journal	121,491	138,180
Student Education Fund	124,205	122,796
Specialty Society Administration	52,030	59,308
Other Organizations	20,520	19,164
CARE Program	256,280	173,732
Legal Fund	598,443	
Interest	4,472	14,603
Depreciation	126,113	125,137
Total Expenses	$2,869,801	$2,092,155
Excess of Revenue Over Expenses	(48,598)	138,380
FUND BALANCE		
Beginning of the Year	2,951,857	2,813,477
End of the Year	$2,903,259	$2,951,857

REFERENCE COMMITTEE C—*reviewed the report of the secretary-treasurer and recommended that it be filed.*

ACTION: **FILED**

Report of the Judicial Council

H. VICTOR BRAREN, M.D., *Chairman*

The Judicial Council of the Tennessee Medical Association (TMA) has not been required either to meet in full session since TMA's April, 1994 House of Delegates meeting, or to review any case appeals yet. We did, however, receive notice of a physician's appeal to the Council of an adverse peer review decision by the Chattanooga-Hamilton County Medical Society. The appeal is in process and will be heard sometime in May or June following the filing of any briefs by the parties.

The Bedford County Medical Society reported that they issued a letter to a member physician who was "openly and maliciously slander(ing) other physicians (in the community) without cause other than to gain patients and position in the community." The Society's Secretary reported that a certified warning letter was sent to the member and that the physician has ceased such conduct.

The Judicial Council has submitted a bylaw amendment for the House of Delegates' consideration that would allow physicians from 21 of the 95 Tennessee counties that do not have, or are not connected to, a TMA component medical society, to join the TMA directly. The Council felt that this amendment would be appropriate and would help the TMA recruit new members who otherwise cannot join, except by creating a perfunctory society that never meets, or by joining a society that is far away from their home county. Physicians could not join from such counties if there were more than ten eligible physicians available for membership. At that point, they would have to form a society.

I consider this a successful year for the Council. As chairman, I wish to thank all of the members of the Judicial Council for their willingness to serve TMA in this important capacity, and those TMA members who assist in local peer review matters.

REFERENCE COMMITTEE C—*reviewed the report of the Judicial Council and recommended that it be filed.*

ACTION: **FILED**

Report of the Chief Executive Officer

Mr. L. Hadley Williams

My report to the House of Delegates this year has been more difficult to write than my previous 18 summaries, not only because it will be my last report to the House but because of the extreme frustration TennCare and TMA's efforts to correct the flawed experiment have brought about. At this time last year, I reported on the status of TMA's legal efforts to bring the State of Tennessee into compliance with federal laws pertaining to the Medicaid program. As a refresher, TMA's lawsuit, filed in Davidson County's Chancery Court, was based on three legal grounds: (1) The State of Tennessee should have published TennCare's rules and regulations ahead of time so all interested and concerned groups, organizations, and individuals could have commented on them and changed the system into true reform. Instead, the administration created the program in secret, in violation of existing law, resulting in no one commenting on the plan; (2) The General Assembly gave the Governor a blank check without any guidelines to create TennCare as he saw fit. The "overdelegation" of power violates the Constitution since the Governor became a legislature unto himself—answerable to no one; and (3) TennCare violates the federal Medicaid "equal access" requirement. This portion of the federal Medicaid law says that a state Medicaid program must reimburse physicians for their services sufficiently to attract them to participate in the plan thus insuring that recipients have health care access which equals that of the general population. TennCare, instead, relies on the Blue Cross/Blue Shield "cram down" requirement, which coerces physicians to participate.

After pursuing weeks of vigorous discovery and uncovering mountains of previously withheld evidence, TMA filed a motion for summary judgment asking the court to rule in TMA's favor without a trial. The State sought similar relief. The court granted the State's motion on August 8, 1994 saying the following about TMA's claims: "The State was fully authorized to publish the program's rules *after the start date.* The 1993 TennCare statute allowed the State to issue "public necessity" rules, meaning (according to the judge) that they did not have to provide advance notice under the administrative procedures act. Further, TMA commented on these barebones necessity rules during the Department of Health's February 17, 1994 hearing, which was more than six weeks after implementation. The judge ruled that TMA should have filed an appeal with the Department of Health at that point over the legality of the rules.

The TMA Board of Trustees voted immediately to appeal the decision and TMA filed its appellate brief the day before Thanksgiving. The State's response brief was filed just before Christmas. The Tennessee Court of Appeals was scheduled to hear oral arguments on March 6, 1995 at 9:00 AM at which time TMA expected to receive a full and fair hearing before the appellate court. The outcome of that hearing could not be incorporated into this report. TMA's General Counsel, Marc Overlock, and outside counsel retained to represent the Association, Sidley and Austin of Chicago, have indicated that the appellate court can do three things: (1) affirm the lower court and Chancellor Kilcrease's decision; (2) rule in TMA's favor and grant TMA summary judgment; or (3) send the case back to the Chancellor for a trial.

TMA is hopeful that both the Sundquist administration and the General Assembly will make changes in the program so that further appellate and trial work is unnecessary. To that end, the Board of Trustees developed a sevenstep plan designed to ensure that patients receive the care they need and deserve and that providers receive a fair and timely reimbursement for rendering their services. All major medical specialty societies were invited to render input into the development of these seven recommendations and many responded with meaningful suggestions which have been incorporated into this final list. The seven recommendations that were made to the new administration in January are as follows:

1. The best health care occurs when physicians fully concentrate their skills on treating patients. TennCare requires, however, that physicians assume the financial liability for the patient care and treatment that managed care organizations (MCOs) refuse or cannot afford to reimburse. This risk creates a treatment conflict because physicians fear that either they may be forced to lay off staff or go out of business altogether. The TennCare Bureau should shift the financial risk back to the MCOs and, ultimately, guarantee that the MCOs are financially viable.

2. Any market works best when people are free to negotiate fair terms. The TennCare Bureau should let the market work and level the MCO playing field so that no one company has an overly dominant position in the TennCare market. We urge the TennCare Bureau to immediately delink the Blue Cross/Blue Shield Tennessee Preferred Network from the TennCare program.

3. TennCare patients should have access to the same standard of health care as is available to privately insured patients. We suggest that equal access can only occur when TennCare provides true incentives for physician participation. We believe that this goal can be accomplished by (1) insuring that TennCare capitation rates are actuarially sound, thereby allowing fair and timely reimbursement for care rendered to patients covered by TennCare; (2) withdrawing the Bureau's proposed regulations that would require a physician to treat any TennCare patient requesting care, even if the physician does not contract with the patient's TennCare MCO; and (3) limiting the malpractice liability exposure for physicians who treat TennCare patients, similar to the immunity granted to stateemployed physicians under the Tennessee Governmental Tort Liability Act (TCA Section 2920310.)

4. Many TennCare patients have been suffering because the TennCare Bureau and the MCOs have not followed through on their joint responsibility to teach enrollees (or their physicians) about how the program works. We suggest that the TennCare Bureau and the MCOs immediately strive to educate enrollees about the program's design, their responsibilities in accessing the health insurance that is offered, and how they must work with their physicians and pharmacists to better care for themselves.

5. We suggest that, with physician participation, together we can easily create meaningful and coherent regulations so that the TennCare program will be administered and operated efficiently. For example, through such regulations, the Bureau could immediately set up an effective physician gatekeeper system, which is the hallmark of any successful managed care venture. To be cost effective, a gatekeeper system must be coupled with liability protection as outlined in TCA Section 2920310 to curtail the cost of defensive medicine.

6. Tennesseans need a strong and independent MCO and TennCare Bureau oversight panel with consumers and TMAnominated physicians to make sure that the Demonstration Project works for everyone's benefit. For example, the panel would (1) oversee whether TennCare provides appropriate drugs in its formularies (now left to individual MCO whim without the needed input of an independent physician panel); (2) ensure that there are enough physicians in the program to care for all TennCare patients and enough money in the system to pay for the medical care that physicians and other providers render; and (3) insure that the distribution of supplemental pool monies is determined not by executive discretion but through coherent rules governing fair and appropriate distribution.

7. Allow TMA to act as liaison between the TennCare Bureau and physicians to ensure that, as these seven steps are carried out and followed, there is always an open line of communication.

I cannot overemphasize the tremendous amount of time and effort TMA's General Counsel, Marc Overlock, has devoted to the TMA lawsuit. In addition, the response by the TMA membership to the Board of Trustees' call for a $200 voluntary dues assessment to help offset the legal costs of the litigation against the State was outstanding. Without such support, TMA could have faced financial difficulties that would have been devastating. Every individual, both members as well as nonmembers, who contributed to the TMA legal fund is due the thanks and appreciation of this Association. TMA's advocacy efforts benefit every physician in Tennessee, not just those who choose to belong to the TMA.

While the epitaph on national health reform for 1994 has been written, many physicians in Tennessee and throughout the country appear to be relieved that efforts to reform our health care system failed this past year. It is, however, unfortunate that we failed to take advantage of what appeared to be a growing mood in Congress to do something about the dominance of the insurance industry over managed care. The nation's largest health insurance insurers (Aetna, Blue Cross/Blue Shield, CIGNA, Metropolitan Life, Prudential, and Travelers) are all heavily invested in the attempt to enlarge their managed care business. Arresting the actions in the private sector that are leading to stronger pressures to downsize the system and impose tighter economic discipline on providers will be difficult to accomplish. At the same time, Congress has taken no concrete steps to relax federal antitrust policy so that physicians can join together to negotiate collectively with health plans or payers. The AMA House of Delegates, meeting in December, reordered the Association's health system reform priorities—stressing regulation of managed care plans and other incremental changes and deemphasizing universal coverage. The top AMA priorities now are: legislative protection of physician and patient autonomy under managed care; curbs on malpractice suits; insurance reform limiting carrier's riskselection practices; antitrust relief, allowing physicians more freedom to take collective action; and creation of taxsheltered medical savings accounts to encourage individual responsibility for health care decisions.

The major AMA thrust in dealing with managed care will be oriented around four themes:

- Profession—scientific and ethical standard setting
- Protection of patient and physician autonomy
- Safeguarding patient and physician rights
- Providing practical assistance to patients and physicians

The major approach will be to secure legislation to rein in the harmful practices of managed care. AMA will also keep the public informed of every facet of managed care. Some of the major objectives are as follows:

- Continue to advocate portability and individual ownership of health insurance
- Advocate a physician health plan network to help facilitate doctordirected physician organizations (POs) and physician hospital organizations (PHOs)
- Support legislation that would change antitrust laws
- Advocate a policy to allow for a "triple option" that would require employers and insurance companies to offer a choice of health plans and physicians, i.e., traditional insur-

TMA MEMBERSHIP REPORT
As of December 31, 1994

	1994	1993	1992	1991	1990
Dues Paying Active Members	5,121	5,078	5,140	5,116	5,125
Dues Paying Resident Members	77	71	78	84	76
Dues Exempt Members	1,400	1,393	1,322	1,163	1,214
Veteran Members	(599)	(506)	(487)	(544)	(536)
Military, Disabled & Retired	(372)	(446)	(426)	(389)	(346)
Student Members	(429)	(441)	(409)	(230)	(332)
TOTAL	6,598	6,542	6,540	6,363	6,415
Deaths	62	49	57	42	61

AMA Members from Tennessee:

TMA Dues Paying & Exempt	4,568
AMA Direct Members	1,895
TOTAL AMA MEMBERS	6,463

71% of TMA members are AMA members

ance, HMOs and PPOs, and benefit payment schedules.

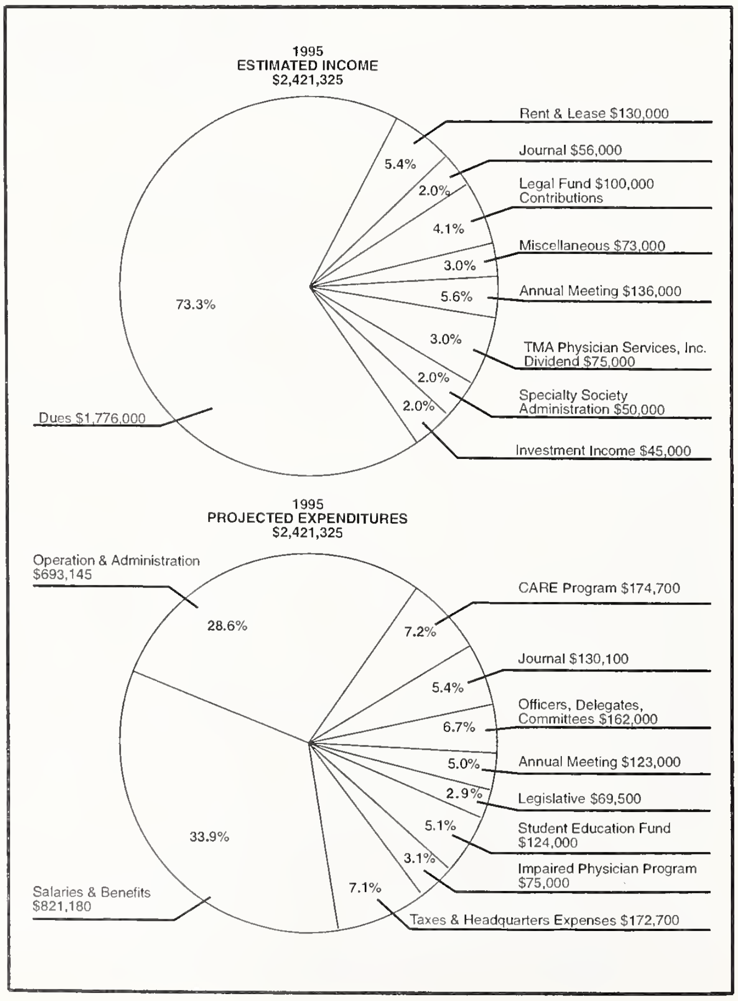
- Advocate medical staff structure in insurance health plans to facilitate physician input
- Advocate passage of the Patient Protection Act
- Advocate reform of ERISA for the protection of patients and to make tort liability of health plans equal to that of physicians

The potential impact of managed care on the patientphysician relationship must also be considered. The AMA's Council on Ethical and Judicial Affairs is extremely concerned over this aspect of managed care. The Council reported to the AMA House last December that "the foundation of the patientphysician relationship is the trust that physicians are dedicated first and foremost to serving the needs of their patients. In the Oath of Hippocrates, trust is a central element in almost all of the ethical obligations of physicians: physicians must keep patients' private information confidential, avoid mischief and sexual misconduct, and give no harmful or deathcausing agent. No other party in the health care system is charged with the responsibility of advocating for patients, and no other party can reasonably be expected to assume the responsibility conscientiously."

The largest risk to patients posed by managed care is a compromise in the quality of care patients expect and demand in this country.

When one looks at what the AMA, TMA, and local societies are trying to accomplish for all physicians, it is difficult to understand why membership in organized medicine's federation is not flourishing. In the present milieu of managed care, organized medicine is the only group promoting patient advocacy. AMA's efforts, if successful, will make managed care more accountable and acceptable.

I submit the membership report (Table), which outlines current TMA membership numbers in various categories as well as those for the past four years for comparison purposes.



Financially and in spite of unprecedented expenses, TMA managed to maintain appropriate fiscal responsibility in 1994. Unbudgeted increases in expenditures for postage, printing, telephone costs, supplies and increased travel for officers, board and staff were experienced. Legislative Committee expenses exceeded budget as might be expected. Despite the unforeseen requirements that resulted in expenses beyond those budgeted, TMA was able to complete the year with expenses exceeding revenue by just over $32,000. A total evaluation of the dues structure is now in order and necessary. The Figure is a graphic outline of projected income and expenditures for 1995.

Although prophecy is the frailest of human gifts, it should come to no one's surprise to know that medicine is involved in a crap game of survival. Unity has never been more important to that survival than at the present time. Fundamental changes are easier to suggest than to implement. TMA's emphasis should continue, in my opinion, to be in providing a practice environment that allows the greatest amount of autonomy for TMA members and maintaining the position as patient advocate while supplying high quality medical care to each and every Tennessean. As Victor Hugo said so eloquently: "The future has several names. For the weak, it is the impossible. For the fainthearted, it is the unknown. For the thoughtful and valiant, it is ideal." It is up to you and your colleagues now to determine which of those futures lies ahead for you.

"And if a kingdom be divided against itself, that house cannot stand." (Mark 3:24)

I close this, my final report to the House, fully confident that the Tennessee Medical Association will continue to survive and thrive just as it has for 165 years as the only statewide organization that represents the interests of all physicians. I pass the reins to a man that has served you exceedingly well for more than 22 years, Don Alexander. Although fully capable of shouldering the load before him, he will need the same encouragement and support that have been given to me for the past 32 years. I thank you all for giving me the opportunity to serve you.

REFERENCE COMMITTEE C—*reviewed the report of the chief executive officer and recommended that it be filed.*

ACTION: **FILED**

Committee Reports

The following standing and special committees made annual reports to the House of Delegates.

-Committee on Scientific Affairs
-Committee on Legislation
-Committee on Governmental Medical Services and Third Party Payors
-Committee on Constitution and Bylaws
-Peer Review Committee
-Committee on Communications and Public Service
-Interprofessional Liaison Committee
-Committee on Continuing Medical Education
-Committee on Rural and Community Health
-Committee on Medicine and Religion
-Committee on Emergency Medical Services
-Primary Care Liaison Committee
-Geriatrics Committee
-Committee on Infectious Diseases
-Membership Committee
-Sports Medicine Committee

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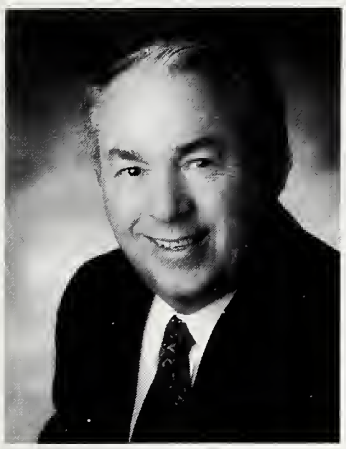
president's page



ROBERT E. BOWERS

Wish You Could Have Been There

Officers of local and state medical societies recently attended the 1995 National Leadership Conference in Washington, D.C. sponsored by the American Medical Association. I wish all physicians could have attended. I believe you would have gained new respect for the organization that represents you in the ongoing debate over health care reform.

For four days we were given information by members of congress and others regarding the strong winds of change blowing across health care, and the legislative agenda regarding these changes. Some important legislation will be voted on during this legislative session. Included among these bills are Regulatory Relief for Physicians from the Clinical Laboratory Improvement Amendments of 1988 (CLIA), a bill for passage of a tax-deferred Medical Savings Account that works similar to an IRA and allows the patient greater choice, the New Patient Protection Act, and a proposed $250,000 cap on noneconomic (pain and suffering) damages. Detailed information about these bills is available through your local or state medical association. Because time is short, it is *imperative* that you learn about this legislation and then personally write or telephone your congressman with your opinions of these proposals.

It became clear to me during the conference that if physicians are to influence the changes—and not simply be smothered by them—we must be the leaders in the debate. The influence we exert should begin at a grassroots level, and continue at a national level. There are several tools we can employ to help achieve this goal, including becoming active in our organized medical associations. We can financially support our representatives, educate ourselves about health care reform, understand the issues, and then share this information with other health care providers, as well as keep our elected officials informed about our views.

Though not all of us were able to attend the 1995 National Leadership Conference, we can still be counted as leaders by becoming involved. The more involved we are, the stronger our voice will become. And a strong voice is hard to ignore.

Robert Bowers

journal of the
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medical association

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TMA, PO Box 120909, Nashville, TN 37212-0909

JUNE, 1995

editorials

The End of an Era

It is a little hard to know how to head this piece and still be accurate. In fact, it's a little hard even to know how to write it without being redundant, since by virtue of his many accomplishments I have had occasion to lionize Hadley Williams on several occasions of late. It is not really a farewell, because Hadley will still be around, running the TMA Physicians Services. It is also not a changing of the guard, since that happened three years ago when Don Alexander was selected to take over the running of the Association. I decided empirically that anything over ten years could be considered an era for these purposes, and since the TMA has been Hadley's shop for considerably longer than that, I came up with the title above.

At the Annual Meeting of the Association a few years back, when we were raising money for construction of the now no longer new headquarters building, a delegate, who shall remain nameless here, arose to say that he had never heard of Hadley Williams, and that now we were talking about building a million dollar monument (I think he may have said mausoleum) to him. At the Annual Meeting just past, the same doctor arose to repeat what he had said before, and to add to it that now that same Mr. Williams was wanting to raise dues again. Not wishing to be unfair to our colleague, I hasten to add that I am paraphrasing and not quoting, and that there was no (or at least I think there was no) animosity implicit in his words. He simply wishes that Mr. Williams would be as penurious as he is. (In fact, Mr. Williams spends Association money as if it were his own.) I'm also certain he recognizes that Mr. Williams was simply fronting for the Board (of which I was a member when we were planning the new headquarters). I know for a fact that Mr. Williams knows for a fact that along with whatever roses there may be, the brickbats come with the turf. He has always accepted both gracefully.

Believing he has earned it, I have used the *Journal* to join a host of others in trying to cover his path with roses. A lot of those were strewn at his retirement luncheon at the Annual Meeting, a few of them thinly disguised as brickbats. It was in places a semi-mini-roast, a sheep in wolf's (or pussy-cat's) clothing, so to speak. Having just recently recited his various accolades and so on (*J Tenn Med Assoc* 88:74-75, Feb 1995), I thought it unnecessary to repeat them here, since this issue of the *Journal* is always overcrowded. I did, however, wish to make mention of his actual retirement as CEO, and the luncheon, about which there will be more in a future issue of the *Journal.*

Thanks from all of us for everything, Hadley. *Bon Voyage*, and God Bless!

J.B.T.

Sign Language

When I was a child I spoke as a child,
I thought as a child, I understood as a child,
but when I became a man
I put away childish things.
First Letter of Paul to the
Church at Corinth, Ch. 13

I had sworn off trying to mitigate the insults to and abuses suffered by our language at the hands of the semi-educated illiterati that comprise such a large percentage of our population, including some with advanced degrees, and many, even perhaps most, of those who have set themselves up as arbiters of communicative excellence, e.g., the media-types. I have even given up, more or less, trying to figure out how such individuals got into the driver's seat, since I have determined, to my own satisfaction, at least, that not only the writers, but the system as well, are irremediable. But I couldn't help once again taking pen in hand, so to speak, to take a parting shot at the computer, which I consider a prime co-conspirator with its users in debasing the mother tongue.

Though when I first entertained that notion I was totally computer illiterate, and suspicious of and threatened by the machines, that is no longer the case. I am totally wedded to my computers, and depend upon them for a great many things, one of which is the wasting of more of my time in a whole host of ways than they will ever save me. Nevertheless, possibly because, as they say, familiarity breeds contempt, I still remain suspicious of them, and continue to approach them with a certain amount of caution and skepticism. One of the things I am skeptical of is their good will toward me, their keeper. I was about to say their master, but that is a conceit I have not yet adopted; I consider it a dangerous one, one about which I would quote for you a passage of Scripture to the effect that pride goeth before a fall. I am acquainted with a good many fallen computer-users. In fact, that category probably has comprised at one time or another everyone who has ever gotten himself hooked up with one of these limbs o' Satan, or what one colleague of mine refers to as the Antichrist. But I digress.

It takes babies a number of months to master even the rudiments of the spoken language, and several years for the written word, but babies learn very quickly to communicate their needs. They do it through signs, even though they do not have what one could call a "sign language." As they learn to speak, the need for signs dwindles, and finally all but vanishes as they learn to read and write, a skill they ultimately develop or not with varying degrees of individuality.

The mathematical skill and inventiveness of the Arabians led to the early and nearly universal adoption of the Arabic numerals and system of calculation, so that mathematics gained a leg up on literary composition and verbal communication. The physical sciences profited from it, too, and developed their own universally understood shorthand. Since computer science is mathematically based, computer shorthand, which is a form of sign language, is also universal.

Sign language persists into adulthood as the form of non-written, non-verbal communication for the deaf, and as a rudimentary but universally understood form of communication, particularly but not necessarily among primitive cultures, even though not all signs are equally understood. By using signs, it is possible for any individual to communicate, even if only in general terms, and subject to misunderstanding, with any other individual anywhere.

Sign language, though, was never intended to supplant the written word, which can be immensely more detailed and incredibly richer. Nor was it ever envisioned that a literal description of the sign would be substituted for proper verbiage as the way of communicating a thought, request, or command. For instance, to say "I am beckoning to you" simply belabors the obvious, and such a literal translation would in any case be a clumsy substitute for "Come here," which is the meaning of the act of beckoning.

Often relying on mathematical shorthand, instead of being helpful in communication computers are then in a fair way of helping the pseudo-educated destroy the language. Those of us who grew to maturity before the computer age learned that one person is taller, shorter, older, younger than another, that one liquid is colder or warmer than another, or that one town is closer or farther away than another. Furthermore, we write that way. These days, though, children grow up with computers, and computers use signs such as > (greater than) and < (less than), so that nowadays the manuscripts that I receive almost without exception reflect the authors' computer teaching by saying not that one person is older than another, but is "of greater age," or is "of greater height" instead of taller, of "greater length" instead of longer, "of greater distance" instead of farther away, and so on. The comparative adjective is therefore becoming an endangered species. Though "greater (or less) than" is the worst and most universal offender, there are many others that you and I could think of if we set our minds to it.

I'm not going to, though. You can, and also may, if you wish. I'm going off instead to some quiet corner under a collard leaf with a loaf of bread and a jug of wine (but not thou, because thou mightest set thy mind to it, and wish to discuss it), and after weeping a bit for our besmirched language, contemplate my navel. But not for long.

Alas!

J.B.T.

mail box

Brain Death—A Common Misconception

To the Editor:

I read with great interest in the February 1995 issue of the *Journal of the Tennessee Medical Association* (*J Tenn Med Assoc* 88:67, 1995) the Loss Prevention Case of the Month in which J. Kelley Avery, M.D., provided a description of the events surrounding the death of a patient. This report was inaccurate and somewhat disturbing.

According to the case report, "after three days in the SICU, the bedside EEG reported no brain activity. She was declared brain dead, and all supportive measures stopped. She died a few minutes later." This last sentence is an inaccurate description of death that prompted me to write in an effort to raise the awareness of Tennessee physicians regarding the actual events surrounding death and provide a clearer definition of death. One major misconception we have perpetuated is using the words "brain death" to distinguish between that and other forms of death. In essence, there is only one form of death, which is the total cessation of blood flow to the brain, regardless of the etiology. Thus, a declaration of *brain* death constitutes *actual* death. In the case report referred to, once the patient was declared brain dead, she had "died." Discontinuing life support measures resulted in arrest of the heart, followed by cessation of circulation, but did not result in death as related in the story. Death occurred at the time the brain death was declared.

Even though this may seem like a minor point, it perpetuates a myth that is passed on to our medical students and new generations of doctors, that there are several types of death and that brain death is a different, unique form of death. This allows physicians to think that a cadaver with a beating heart is somehow alive.

I hope this comment will find a prominent place in the Tennessee Medical *Journal* since Tennessee has always been a leading state in promoting education regarding organ donation. This one small misconception has probably led to the loss of many donors. Educating our physicians that brain death IS actual death is our responsibility.

A. Osama Gaber, M.D.
Chief, Transplant Division
Baptist Memorial Health Care Foundation
956 Court Ave., Suite A 202
Memphis, TN 38163-2116

Dr. Avery Replies

Dr. Gaber points out an error in the verbiage found in the Case of the Month, "Surgeon or System—Malpractice." The sentence reads, "After three days in the SICU, a bedside EEG reported no brain activity. She was declared brain dead and all supportive measures stopped. She died a few minutes later." Dr. Gaber complains that my rendition of that case had this patient dying one too many times. Further, the letter states that a person who is "brain dead" is, in fact, dead! I could not agree more. Perhaps it would have been more true to the facts to state that, a "few minutes" after the removal of all life support the patient was "pronounced dead."

Dr. Gaber suggests that my misstatement "perpetuates the myth that is passed along to medical students and new generations of doctors . . . . This allows physicians to think that a cadaver with a beating heart is somehow alive." The obvious implication is that this "myth" denies organs suitable for transplantation. I doubt it!

For Dr. Gaber's information, some of us were around in 1968 and before when the definition of death was negotiated with the Legislature by the Tennessee Medical Association. Those negotiations were not easy, nor did the definition come out exactly as we in TMA wanted it. But it did come out, and the state's Uniform Determination of Death Act, TCA Section 68-3-501, states, "An individual who has sustained either: (1) irreversible cessation of circulation and respiratory functions; or (2) irreversible cessation of all functions of the brain including the brain stem; is dead. A determination of death must be made in accordance with accepted medical standards."

It could be argued that a person removed from life support including mechanical ventilation does not meet either of those standards immediately. Usually the heart continues to beat, so all circulatory activity has not ceased, and until one has waited a few minutes one does not know that spontaneous respirations will not occur, indicating some level of function in the brain stem; but I won't argue that. I will say that many times the family, wanting to be with their loved one at the time of death, will be present and watching for breathing and observing the heart continuing to beat. Until these activities stop, in their eyes that loved one will not be dead.

It is not the "myth" perpetuated by physicians that delays harvesting suitable organs, an event that in my experience occurs very rarely, but the very real and multifactorial human issues involving education, grief, sadness, and pain.

J. Kelley Avery, M.D.
PO Box 159012
Nashville, TN 37215-9012

in memoriam

Harvey Wallace Carter, age 82. Died March 29, 1995. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

Theodore W. Davis, age 95. Died April 2, 1995. Graduate of Vanderbilt University School of Medicine. Member of Nashville Academy of Medicine.

new members

The *Journal* takes this opportunity to welcome these new members to the Tennesssee Medical Association.

CAMPBELL COUNTY MEDICAL SOCIETY
M. Humayun Kabir, M.D., Jellico

CONSOLIDATED MEDICAL ASSEMBLY OF WEST TENNESSEE
John G. Sparrow, M.D., Jackson

HENRY COUNTY MEDICAL SOCIETY
Dirk Hamp, M.D., Paris
Debra S. Selby, M.D., Paris

KNOXVILLE ACADEMY OF MEDICINE
Samuel Spence McCachren, M.D., Knoxville
Michael K. McCloud, M.D., Knoxville
Eric Nicely, M.D., Knoxville

MEMPHIS-SHELBY COUNTY MEDICAL SOCIETY
James David Acker, M.D., Memphis
Laura D. Carbone, M.D., Memphis
Edgar Joseph Chauvin, M.D., Memphis
Noel Kent Hunt, M.D., Cordova
James W. Huston, M.D., Bartlett
Christopher Eric Johnson, M.D., Memphis
George H. Peeler III, M.D., Memphis
Stephen M. Waggoner, M.D., Memphis
Bruce L. Webber, M.D., Memphis
Darryl Seth Weiman, M.D., Memphis

MONROE COUNTY MEDICAL SOCIETY
Michael Wayne Hahn, M.D., Athens

NASHVILLE ACADEMY OF MEDICINE
Margaret Mary Brennan, M.D., Nashville
William Floyd Fleet III, M.D., Nashville
Christopher C. Hill, M.D., Nashville
Barry Eugene Yarbrough, M.D., Nashville

ROANE-ANDERSON COUNTY MEDICAL SOCIETY
Randall R. Robbins, M.D., Oak Ridge

TMA Members Receive AMA Physician's Recognition Award

The following TMA members qualified for the AMA Physician's Recognition Award during March 1995. This list, supplied by the AMA, does not include members who reside in other states.

Physicians can receive the PRA certificate valid for one, two, or three years. For the one-year award, physicians report 50 hours of continuing medical education, including 20 hours of Category 1; for the two-year award, physicians report 100 hours of CME, including 40 hours of Category 1; for the three-year award, physicians report 150 hours of CME, 60 of which are Category 1. Each application for the PRA must also verify participation in Category 2 CME activities.

Charles C. Adams, M.D., Chattanooga
Oscar W. Carter, M.D., Nashville
Nicholas-John Economides, M.D., Memphis
Francis A. Goswitz, M.D., Oak Ridge
Cauley W. Hayes Jr., M.D., Chattanooga
H. Kenneth Johnson, M.D., Newport
Gulla B. Krishna, M.D., Tullahoma
I. N. Kutty, M.D., Kingsport
Margret W. Rhinehart, M.D., Spencer
Deloris E. Rissling, M.D., Chattanooga
Jerome S. Siegel, M.D., Memphis
John E. Vanhooydonk, M.D., Nashville
Charles E. White, M.D., Memphis

announcements

CALENDAR OF MEETINGS

NATIONAL

July 15-17	Asthma 95: Theory to Treatment (sponsored by Am Acad Allergy/Immunology, Am Thoracic Society, and Am College of Chest Physicians—Palmer House, Chicago
July 16-20	American Association for Clinical Chemistry—Convention Center, Anaheim, Cal.
July 20-23	American Orthopaedic Foot and Ankle Society—Westin, Vail, Colo.
Aug. 8-12	Wilderness Medical Society—Ritz Carlton, Aspen, Colo.
Aug. 12	Pediatric Tools of the Trade—Scottish Rite Children's Medical Center, Atlanta
Aug. 13-16	Midwest Surgical Association—Grand Traverse Resort, Traverse City, Mich.

STATE

June 15-17	Upper Cumberland Medical Society—Fairfield Glade

Actions of the Tennessee State Board of Medical Examiners

March, 1995

Name: Robert W. Dail, M.D. (Chattanooga)

Violation: Disciplinary action taken by the state of Texas.

Action: Per agreed order, license suspended for three years; suspension stayed except for first six months with license placed on probation for remainder of the suspension period. Must appear before Board twice a year during probation. Must execute a contract with the Impaired Physician Program. A random sampling of Dr. Dail's medical charts and billing records will be reviewed semiannually by the medical director of the Board of Medical Examiners.

TMA continuing medical education opportunities

TMA is accredited by the Accreditation Council for Continuing Medical Education (ACCME) as a sponsor of continuing medical education for physicians. Nonaccredited organizations may request TMA's joint sponsorship of CME activities. As an accredited sponsor, TMA is authorized to designate certain CME activities for credit in the AMA Physician's Recognition Award Program.

TMA is recognized by ACCME as the accreditor of institutions in Tennessee conducting intrastate CME programs. Any organization conducting such programs may apply to TMA for accreditation as a sponsor of CME.

Inquiries regarding TMA joint sponsorship of CME or application for accreditation as a sponsor of CME should be made in writing to: Director of Continuing Medical Education, Tennessee Medical Association, PO Box 120909, Nashville, TN 37212-0909.

IMPORTANT NOTICE

Published in this section are many educational opportunities which come to our attention which might be of interest to our membership. As some of these are very long, full year schedules, and others are detailed descriptions of courses, in order to conserve space, most of them will be published in only one issue of the Journal.

IN TENNESSEE

VANDERBILT UNIVERSITY MEDICAL CENTER

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The doctor and faculty plan an individualized program to meet the physician's practice needs. This may include contact with patients, participation in clinical rounds and diagnostic procedures, interaction with faculty and housestaff, access to the Medical Center Library and other learning resources, and other benefits of a preceptorship. AMA/PRA Category 1 credit is provided for each hour of participation. Physicians *must* be licensed and be in active practice with evidence of liability coverage.

Ongoing Rounds and Conferences

Arrangements can be made for licensed practicing physicians to attend for credit.

Special Conferences/Seminars

Detailed brochures for the following courses are available. In some cases, registration numbers are limited.

July 2-6	12th International Congress of Nephrology—Madrid, Spain
July 18-21	18th Annual Contemporary Clinical Neurology Symposium—Hilton Head, S.C.
Aug. 3-4	Advanced/Functional Endoscopic Sinus Surgery 1995
Aug. 12-13	Color Doppler Sonography—Atlanta
Aug. 29	Laser Assisted Uvulo-Palatoplasty: A New Treatment for Snoring
Oct. 6-7	Substance Abuse Seminar
Oct. 27-28	Laryngeal Video Endostroboscopy
Nov. 2-4	Lasers in Otolaryngology-Head and Neck Surgery
Nov. 9-11	Vanderbilt Neonatology and AAP District IV Spring Meeting—Asheville, N.C.
Dec. 1-2	21st Annual High Risk Obstetrics Seminar

For information contact Division of CME, Vanderbilt University School of Medicine, D-8211 MCN, Nashville, TN 37232, Tel. (615) 322-4030.

MEHARRY MEDICAL COLLEGE

Extended Continuing Education Program

Arrangements have been made with many services and departments in the medical school to allow practicing physicians to participate in the service's activities for a period of one day to one week. This program provides an opportunity for physicians to study in depth for a specified period. The schedule of activities is individualized in response to the physician's request by the participating department. The experience includes conferences, ward rounds, audiovisual materials and contact with patients, residents and faculty.

Fee: $75 per day or $275 per five-day week of educational experience including lunch and parking at Meharry Medical College. *Credit:* AMA Category 1 of the Physician's Recognition Award, AAFP, and Continuing Education Units from Meharry Medical College. *Application:* For information contact Henry A. Moses, Ph.D., Director of Continuing Education, Meharry Medical College, 1005 D.B. Todd Blvd., Nashville, TN 37208, Tel. (615) 327-6235.

UNIVERSITY OF TENNESSEE

Continuing Education Schedule

Memphis

Aug. 7-12	Contemporary Issues in Obstetrics and Gynecology—Destin, Fla.
Aug. 23-26	Pulmonary and Critical Care Medicine—Destin, Fla.
Sept. 14-15	27th Conference on the Mother, Fetus, and Newborn

Knoxville

Sept. 25-27	17th Annual Obstetric Office Ultrasound Workshop
Oct. 25-27	Perinatal Update '95—Gatlinburg
Oct. 30-Nov. 1	14th Annual Smoky Mountains Seminar in Obstetrics and Gynecology—Gatlinburg

For information contact Mrs. Jean Taylor Bryan, Office of CME, University of Tennessee, 800 Madison Ave., Memphis, TN 38163, Tel. (901) 448-5547.

SAINT THOMAS HOSPITAL

Oct. 7	Contemporary Topics in Surgical Pathology IX: Soft Tissue Pathology

For information contact Registration Secretary, St. Thomas Hospital, Nashville, Tel. (615) 222-2007.

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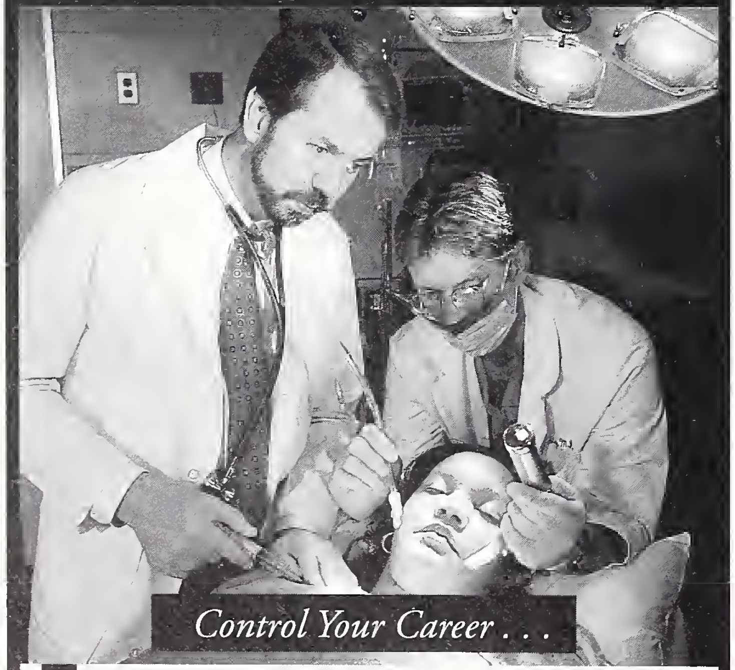

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Surgical Ligation of a Patent Ductus Arteriosus in a Preterm Infant With Multi-System Organ Failure

DAVID M. LINGLE, M.D.; DARRYL S. WEIMAN, M.D.; and THOMAS A. SANTORA, M.D.

Introduction

A patent ductus arteriosus (PDA) occurs when the fetal ductus arteriosus fails to close after birth. A PDA is found in about one in 2,000 live births at term, and accounts for about 10% of all types of congenital heart disease. It is more common in premature infants, where the incidence may be above 15%.[1]

About 30% of patients born with an isolated ductus arteriosus die in the first year of life. Death is almost always due to congestive heart failure (CHF) with pneumonia another common cause. In patients who survive infancy with PDA, right heart failure can occur due to severe pulmonary vascular disease, usually by the second or third decade of life. Patients with a small PDA may have subacute bacterial endocarditis, but with the antibiotics that we have at our disposal today, this is rarely lethal.

When a newborn is found with a ductus arteriosus an attempt is usually made to close the ductus with indomethacin. If the ductus does not close, surgical closure is generally recommended.

We describe a premature infant with a giant PDA who developed necrotizing enterocolitis (NEC) complicated by perforation on his third day of life. CHF, renal insufficiency, respiratory failure, and mesenteric ischemia all resolved after PDA ligation.

Case Report

A male infant was born to a 30-year-old gravida 1 para 0 who had premature rupture of her membranes at 32 weeks gestation. She delivered 18 days later. While she was in labor an elevation in fetal heart rate was noted and she was treated with ampicillin and gentamicin. The neonate, whose estimated gestational age was 35 weeks, was transferred to the intensive care unit and a sepsis workup was begun. He was given ampicillin and gentamicin. Upon initial attempts at feeding, the infant would vomit bile-stained material, and heme-positive stools were noted. When a pneumoperitoneum was seen on abdominal radiographs, NEC was suspected. Clindamycin and vancomycin were started and ampicillin was stopped. On the third day of life, an exploratory laparotomy disclosed a necrotic, perforated cecum and necrotic ascending colon, for which a right hemicolectomy with an ileostomy and mucous fistula was done. Postoperatively, the infant could not be weaned from ventilatory support, he became thrombocytopenic and febrile, and his abdominal girth continued to increase. On the sixth day of life a murmur was noted. On day 7, at another exploratory laparotomy, a perforated jejunum and ileum were resected, and a double-barrelled jejunostomy was performed. At that time, blood cultures were positive for *Escherichia coli*. An echocardiogram revealed a large PDA and a patent foramen ovale, but the heart was otherwise structurally normal, with good ventricular function. When the infant began to exhibit signs of CHF with increased fluid retention and hypotension, treatment with furosemide, dobutamine, and dopamine was begun. The patient required increased oxygen to maintain adequate oxygenation, and also developed renal failure.

From the Department of Surgery, Medical College of Pennsylvania (Drs. Lingle and Santora), and the Division of Cardiothoracic Surgery, University of Tennessee College of Medicine, Memphis (Dr. Weiman).

Reprint requests to Division of Cardiothoracic Surgery, University of Tennessee College of Medicine, 956 Court Ave, Suite G212, Memphis, TN 38163-2116 (Dr. Weiman).

Multiple transfusions of fresh frozen plasma and packed red blood cells and platelets were given as needed, and on day 17 of life the infant had a left posterolateral thoracotomy with ligation of the PDA. The ductus was approximately three times the size of the descending aorta. Postoperatively, the infant required less ventilatory support, and by postoperative day 5 the Fio$_2$ was decreased to 30%. On postoperative day 15 (day 32 of life) oral feeding was begun and parenteral nutrition gradually decreased. The infant was discharged home on his 92nd day of life tolerating his feedings well. Hematologic, renal, and gastrointestinal problems had all resolved.

Discussion

Patients who have a PDA will usually have left to right shunting of blood, and, if it is severe enough, CHF. The heart failure subsequently results in end-organ hypoperfusion. In infants of low birth weight, Cassady et al[2] note that early prophylactic closure of the PDA reduces the infant's risk for NEC. Normally, the PDA closes within 10 to 15 hours of life. In the majority of premature infants the PDA will spontaneously close within three days. McKone and Weesner[3] recommend closure of a PDA after three days if the infant has a large shunt and respiratory illness. Others note that in infants with gestational age greater than or equal to 30 weeks, uncomplicated respiratory distress does not alter normal closure.[4] The persistence of left to right shunting perpetuated our patient's cascading multi-system organ failure. Clyman et al[5] in their work with preterm lambs with PDAs found significant deficits in end-organ perfusion. As our patient's organ perfusion improved after ligation, so did his clinical course with respect to each organ. Ventilatory support was gradually decreased and finally discontinued. The left ventricular volume overload was relieved and better end-organ perfusion was obtained. The patient was able to resolve his NEC and heal his subsequent small bowel reanastomoses. We present this case to emphasize the deleterious effects of a PDA in an infant with multi-system organ failure. An aggressive approach should be taken in ligating the PDA in this clinical situation. ❑

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HELP FOR IMPAIRED PHYSICIANS

The Tennessee Medical Foundation Impaired Physician Peer Review Committee assists doctors who are suffering from the disease of chemical dependence, or mental or emotional illness, or both, including certain behaviors problematic for physicians. The thrust of the program is rehabilitative, not punitive. The Committee is composed of physicians who have special expertise in these areas, some from personal experience. Effective treatment for these illnesses is achieved most easily when the disease or illness is detected early. The Committee urges family, friends, and associates to avoid misguided sympathy which enables a physician's impaired condition to deteriorate.

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A Nonpharmacologic Intervention For Syndrome X in a Low-Income Urban Population

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Introduction

Patients with coincident hypertension, non-insulin dependent diabetes mellitus (NIDDM), and obesity are frequently encountered. Coupled with insulin resistance, hyperinsulinemia, and hyperlipidemia, this condition is sometimes referred to as "syndrome X" or the "metabolic syndrome."[1-4] Resnick[5] has recently suggested a designation of "*g*eneralized *c*ardiovascular-*m*etabolic *d*isease" (GCMD). Although the pathophysiology of GCMD remains ill-defined, it is a persistent clinical challenge for most primary care physicians. The increased morbidity and mortality associated with GCMD has been well described,[6-9] and research on GCMD has been conducted worldwide.[4,10-12]

Better glycemic control, reduced systolic and diastolic blood pressure, and weight reduction significantly benefit patients, but this is difficult to accomplish.[10,13,14] Pharmacologic GCMD interventions frequently have only limited success, sometimes because affected patients are unable to afford the cost of medicine. Nonpharmacologic interventions are helpful when patients are compliant with physicians' recommendations.[15-18]

We were unable to find a study that addressed the effect of health education on GCMD in working poor patients in an urban area. Therefore this study was designed to intervene through health education, motivation, and incentives to support urban working poor patients making behavioral changes and improving compliance with pharmacologic treatments.

Methods

Fifty female patients were recruited for this study from a pool of 15,000 patients of the Church Health Center in Memphis. The Church Health Center is a not-for-profit agency which provides primary health care for low-wage workers living in an urban area. All patients had diagnoses of hypertension, diabetes and obesity, and were recruited during their regular office visit.

Six education and support sessions were held, one each month, Monday through Saturday, and each patient chose a day of the week she wished to attend. The largest class contained 17 patients and the smallest five patients. The sessions emphasized different aspects of GCMD and offered suggestions and encouragement for improved health. Sessions were conducted by a staff nurse, health educator, or pastoral counselor. Patient questions and general discussion were encouraged at every meeting, and patient incentives were offered (Table 1). During the period of the study, each patient's physician was free to alter pharmacologic interventions as appropriate.

Baseline weights, blood pressures, glycosylated hemoglobins (HbA_{1C}) and blood chemistries were collected at the first intervention session. Endpoint weights and blood pressures were recorded at the last session each patient attended. Following the last scheduled session, at the patients' next regular office visit (within six months), the endpoint laboratory data were collected and documented.

All laboratory measurements were made on fasting specimens. Weights were taken on a standard office scale, barefoot but in street clothes. Blood pressures were taken by trained nursing staff using a Tyco sphygmomanometer while the patient was at rest in a sitting position.

Data were analyzed using descriptive and inferential statistics available in StatView using a

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Reprint requests to Church Health Center, 1210 Peabody Ave., Memphis, TN 38104 (Dr. Morris).

TABLE 1

INTERVENTION*

Session	Topic	Session Contents	Incentive†	Educator
1	"What is the Durham Study"	Overview of the schedule, projects, and responsibilities expected from the participants	Yes	RN
2	"Your Lab Results and What They Mean"	Description and explanation of lab work results	Yes	RN
3	"Taking Care of All of You"	Guidance on coping with stress, anxiety, and depression	Yes	Pastoral Counselor
4	"Fitness and Exercise"	Expressing the importance of weight maintenance through exercise and nutrition, and describing existing health education programs offered	Yes	Health Educator
5	"What Is Hypertension"	Educate patients on the cardiovascular system and on how high blood pressure medication works	Yes	RN
6	Open Discussion	Opportunity for participants to raise additional issues and ask questions	Yes	Health Educator

* A document containing more detailed descriptions of intervention session content is available from the Church Health Center.
† Patient incentives included free dental cleaning and evaluation, medications at reduced cost, coupons, special gifts such as pill containers, and invitations to other educational programs.

Macintosh SE computer. Statistical tests reported here were paired-samples t-tests of average differences between baseline and end of study values for systolic blood pressure (SBP), diastolic blood pressure (DBP), HbA_{1C}, weight, total cholesterol, high-density lipoproteins, and low-density lipoproteins. A nondirectional probability of Type I error less than .05 was adopted as our criterion of statistical significance.

Results

Fifty female patients aged 55 to 69 years old, working in low-wage jobs and having concurrent diagnoses of hypertension, diabetes and obesity, were recruited for this study. Forty-one patients were African-American and nine were white. Mean age for the sample was 61.8±6.8 (mean±SD) years, mean height was 64.6±2.5 inches, and mean weight was 217.5±46.0 pounds. The patients attended a mean of 4.6±1.4 intervention sessions, and 45 patients attended at least half the intervention sessions.

Data analysis using paired-samples t-tests documented significant lowering of HbA_{1C} and SBP in the study cohort. Changes in DBP, weight, total cholesterol, high-density lipoprotein, and low-density lipoprotein were not statistically significant. These statistical results are tabulated in Table 2.

Discussion

The beneficial effects of lowering cardiovascular risk factors are well established.[6-9,19] In patients with the constellation of problems generated by hypertension, diabetes and obesity, a multifaceted approach to the syndrome may be required. Unfortunately, effectively treating the syndrome is frustrating and elusive for all practitioners. This, we believe, is especially true for physicians caring for urban poor patients in the United States. Under optimal conditions, long-term effective treatment is difficult, but the problems associated with poverty make effective care much more difficult. The inability of patients without health insurance to purchase their medicine often makes compliance with pharmacologic therapy impractical. Patients' lack of education about diet and the nature of their disease further hinder effective treatment.

Whereas Sawicki et al,[10] Brown,[20] and others have demonstrated effectiveness of health education strategies, this intervention has rarely been successfully accomplished among a working poor population. Our data, however, document that significant improvement in two major cardiovascular risk factors, HbA_{1C} and SBP, was achieved through health education and patient support sessions.

These results show what many practitioners among the poor have intuitively believed for years. Although some clinicians may expect that poor patients would not attend and would not follow through with health education sessions and instructions, 90% of the subjects attended at least half of the sessions, and we observed patients to have enthusiasm and motivation to address their problems.

Success of the intervention was possibly enhanced by the nature of the Church Health Center, where it was conducted. Many participants chose the health center for medical care because of its perceived connection with their own religious institutions, and therefore they may be motivated to make behavioral changes partly for religious rea-

TABLE 2

STATISTICAL ANALYSIS OF SIX-MONTH CHANGE IN RISK FACTORS

Risk Factor	Baseline (mean+SD)	Endpoint (mean+SD)	Difference	t-value*	*P*-value
Systolic blood pressure (mm Hg)	159.5±26.5	149.4±20.9	-10.1	3.0	.005
Diastolic blood pressure (mm Hg)	88.5±8.8	86.4±8.8	-2.1	1.5	.13
Glycosylated hemoglobin† (%)	10.0±2.1	9.0±1.9	-1.1	4.1	<.001
Weight (lb)	217.5±46.0	215.8±50.0	-1.7	0.8	.41
Cholesterol					
High-density lipoprotein (mg/dl)	51.4±12.4	51.1±13.9	-0.2	0.2	.84
Low-density lipoprotein (mg/dl)	147.2±42.5	150.4±38.7	+3.2	1.0	.33
Total (mg/dl)	232.9±49.7	232.4±44.6	-0.5	0.2	.87

* Paired-samples t-tests.

† HbA_{1C}.

sons. Nonetheless, our results are similar to other findings among disparate populations, including the study done by Koutis et al[4] of men in Crete, and the study done by Sawicki et al[10] on middle class men and women in Dusseldorf, Germany. We therefore believe this study to demonstrate that urban working poor patients with GCMD can benefit from a health intervention program.

The study is limited by there having been only a single cohort and a single site, but results warrant further testing. If shown to be generally effective, then implications for long-term health of many urban poor could be profound.

Conclusion

We devised a six-month study that used health education and patient support to influence behavioral changes in economically disadvantaged patients with a diagnosis of "syndrome X" ("metabolic syndrome," or "GCMD"). The intervention was shown to have significantly lowered HbA_{1C} and SBP for the cohort. DBP showed downward trend that approached statistical significance. We believe that the results merit further research and could have an impact on the health of America's urban low-wage workers. ❑

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Management of Vascular Injury in Penetrating Thoracic Trauma

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Introduction

Thoracic trauma occurs frequently but seldom requires surgical intervention. The majority of thoracic trauma patients can be treated with tube thoracostomy alone. Even penetrating thoracic trauma rarely necessitates exploration. There are, however, several indications for exploratory thoracotomy for blunt and penetrating injuries that could lead to unnecessary morbidity or mortality if they are not recognized quickly.

At the University of Tennessee Medical Center in Knoxville, the Trauma Service recently admitted two patients who required exploration for penetrating thoracic injuries. These cases will be described, and absolute and relative indications for exploratory thoracotomy will be reviewed.

Case Reports

Case No. 1. A 17-year-old boy entered the emergency room (ER) having sustained a gunshot wound to the right side of the neck anteriorly (zone 1) at the sternoclavicular junction; there was no exit wound. He was in severe respiratory distress and was intubated on arrival. His heart rate was in the 120s, and his initial blood pressure was 80/P. On physical examination, breath sounds were decreased in the right hemithorax, and needle decompression was performed, followed quickly by a right tube thoracostomy. His hemorrhagic shock responded to rapid infusion of one liter of crystalloid. Chest radiograph after intubation and placement of the thoracostomy tube revealed multiple metal fragments over the right apical lung field and a fracture of the right posterior fifth rib with associated pulmonary contusion (Fig. 1).

On placement of the thoracostomy tube, only 150 ml of bright red blood were evacuated initially from the hemithorax, but over the next 20 minutes the tube continued to drain, for a total of 1,500 ml. The patient was taken immediately to the operating room (OR), where a right posterolateral thoracotomy was performed through the fifth intercostal space. The chest was found to contain another 1,500 ml of clotted blood. The source of bleeding was identified as a partially transected right internal mammary artery. Bleeding was controlled with digital pressure as the parietal pleura was dissected to enable ligation of the vessel. After hemostasis was established, attention was turned to the right upper lobe of the lung, the anterior segment of which contained a firm mass, the nature of which was obscure. It was therefore resected, using a GIA stapler for closure. Examination revealed an inactive focus of histoplasmosis.

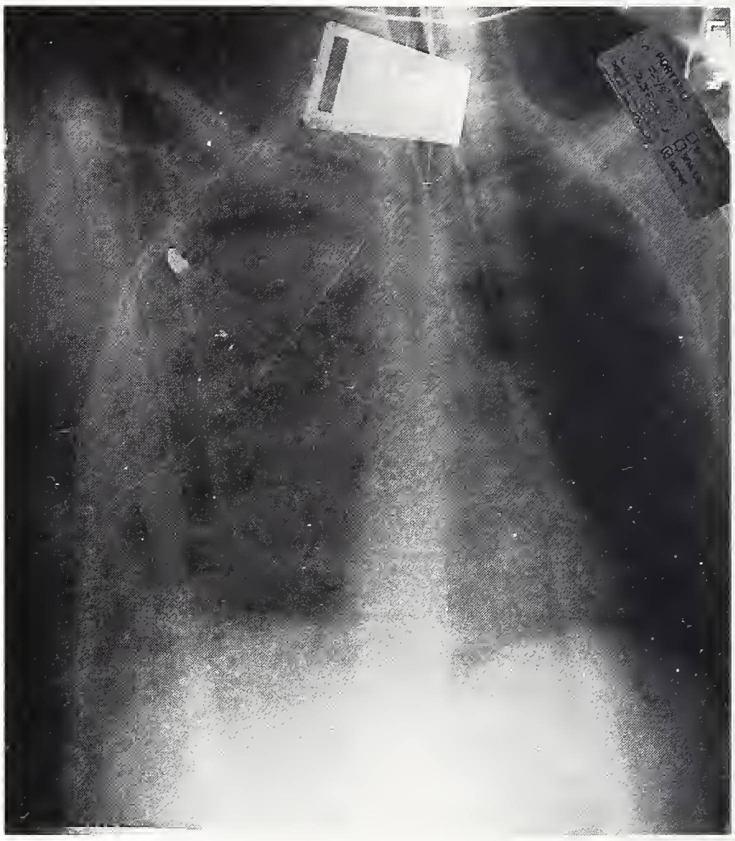

Figure 1. Chest radiograph reveals massive hemothorax.

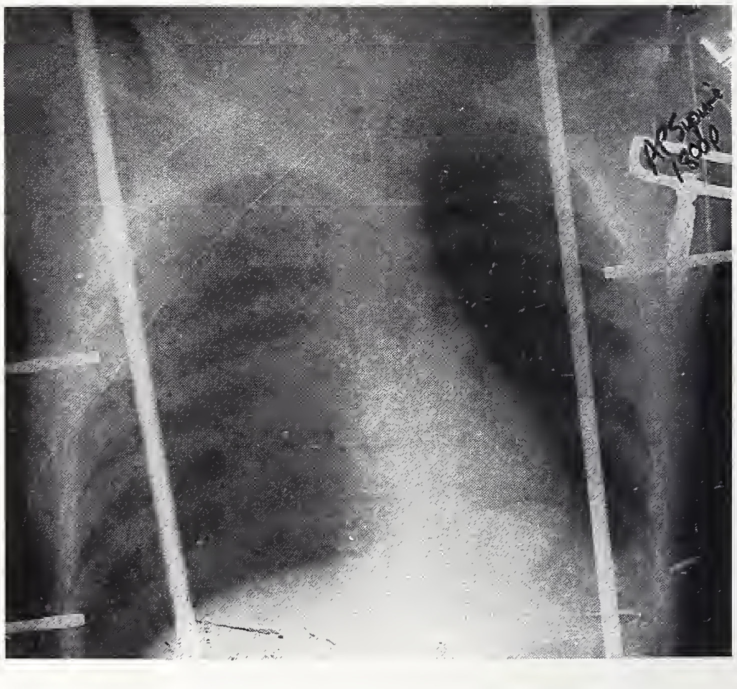

Figure 2. Note right neck hematoma and missile tract through right apical hemithorax on chest radiograph.

From the Department of Surgery, University of Tennessee Medical Center, Knoxville.

TABLE 1*

INDICATIONS FOR ELECTIVE THORACOTOMY

Indications for Thoracotomy
  - Vascular trauma associated with penetrating thoracic outlet injury
  - Major chest wall loss
  - Massive chest tube air leak
  - Tracheal or bronchial injury
  - Great vessel injury
  - Missile traversing the mediastinum
  - Toxic chemical infusion into the thoracic cavity
  - Ruling out projectile vascular embolism
  - Placement of atrio-caval shunt

Relative Indications for Thoracotomy
  - Flail chest
  - Fibrothorax
  - Posttraumatic massive pulmonary embolism
  - Proximal vascular control for penetrating abdominal injury

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*From Pickard and Mattox.[2]

Further exploration of the chest revealed multiple missile fragments in the posterior chest wall; they were removed by sharp dissection, and hemostasis was established using electrocautery. The chest was closed with the chest tubes, and the patient was transferred to the intensive care unit (ICU) in stable condition. He was extubated within the first 24 hours postoperatively and transferred to the floor. The remainder of his hospitalization consisted of aggressive pulmonary toilet. His chest tubes were removed, and he was discharged on hospital day 4.

Case No. 2. A 19-year-old man was brought to the ER without an airway and in shock, having sustained a high-velocity gunshot wound to the right side of the face. The projectile had traveled through the mandible, down the neck, and into the right apical hemithorax before exiting through the back. An adequate airway could not be maintained, and orotracheal intubation was attempted without success, therefore, emergency cricothyroidotomy was performed, followed by chest radiograph (Fig. 2).

A massive expanding right neck hematoma had displaced the trachea to the left. A right tube thoracostomy returned 500 ml of blood, after which the patient's blood pressure improved, but the tachycardia remained. When the right neck hematoma continued to expand, the patient was taken to the OR, where proximal vascular control of the great vessels of the neck was obtained through a median sternotomy. Dissection into the right side of the neck revealed that the bullet had transected the right internal jugular vein, the right subclavian vein, and the right subclavian artery, resulting in massive bleeding. The veins were ligated, control of the right subclavian artery proximally and distally was obtained, and the transected portion of the artery was resected and replaced by interposition of a 6-mm PTFE graft. Fortunately, the vertebral artery and carotid arteries were not injured. The phrenic nerve had been transected, but the vagus and right recurrent laryngeal nerves appeared to be intact. The patient had a coagulopathy from the onset of surgery, requiring massive transfusion of blood and blood products.

When the right hemithorax was explored, the bullet was found to have tracked through the apex of the upper lobe and the posterior aspect of the right hemithorax, causing significant bleeding, which was controlled with a TIA stapler. The posterior chest wall hemorrhage was believed to be from intercostal vessels, which were ligated with silk suture, but packing was required to maintain hemostasis. Further exploration of the neck revealed significant bleeding from the posterior mandibular wound. Ligation of the facial vein provided hemostasis. The wounds were irrigated, two mediastinal chest tubes were placed, and after the sternum and the neck were closed in the standard fashion, the patient was transferred to the ICU for continued resuscitation and treatment of his shock and coagulopathy. After a prolonged ICU stay, he was discharged.

Discussion

The initial evaluation of a patient with thoracic trauma is identical to that of any trauma patient. Attention is first directed toward control of the airway, breathing, and the circulation.[1] Chest radiography is an essential part of the workup of thoracic injury. However, when time does not permit obtaining an adequate film, emergency tube thoracostomy may precede this study if hemothorax or pneumothorax is suspected. As many as 85% of patients with thoracic trauma will require a closed tube thoracostomy.[2] Placement of a non-trocar chest tube using an open technique is recommended, since introduction of trocars may cause additional injury.[2] After tube thoracostomy a rush of air or immediate evacuation of blood should be noted, with volume estimated if possible. A volume of 1,500 ml initially or 200 ml/hr for five consecutive hours is indication for exploration.[2,3]

There are rare clinical situations that mandate thoracotomy in the ER. These include cardiac tamponade, acute deterioration after penetrating trauma leading to witnessed cardiac arrest, and, in some instances, blunt trauma. Pickard and Mattox[2] have discussed indications for elective thoracotomy that should take place in the OR (Table 1).

In planning exploratory thoracotomy, it is essential to understand the track of the missile or penetrating object. Placement of a radiopaque marker prior to chest radiograph may help demonstrate entrance and exit wounds on the subsequent study, and assist in this understanding. In the present cases the diagnosis of continued intrathoracic hemorrhage was made quickly. The decision to perform exploratory thoracotomy was based upon the survey of injuries, the trajectory of the bullets, and radiographic evidence of intrathoracic hemorrhage, combined with the knowledge of continued hemorrhage gained through placement of closed tube thoracostomy.

The choice of incision for thoracic trauma is critical for the best chance of vascular control. Suspected injuries to the root of the great vessels or the heart require median sternotomy. Right subclavian artery exploration is easiest through a low right supraclavicular incision. Left subclavian artery exploration is best through a left lateral thoracotomy. When multiple vessel injury occurs, combined incisions may be necessary, e.g., combined neck and median sternotomy or "trap door" incisions.[2] ❑

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Vanderbilt Morning Report

Profound Anemia Following a Respiratory Infection

Case Report

A 69-year-old woman presented herself with a history of cough productive of white sputum, mild dyspnea, low-grade fever, malaise, and anorexia for three weeks. Initial x-ray of the chest demonstrated a small, patchy right upper lobe infiltrate. She was treated as an outpatient with an oral cephalosporin for seven days followed by an oral quinolone for seven days, but her symptoms persisted. She had had close contact with her daughter, who had recently been treated for a documented mycoplasma respiratory infection. Cold agglutinins were positive at low titer 1:32, and her PCV was 31%. Oral erythromycin therapy was started, with complete resolution of her symptoms within 72 hours, but about three days later she presented herself to the emergency room complaining of profound fatigue, malaise, and dyspnea; she had a low-grade fever. Her temperature at that time was 101.1°F, pulse 80/min, blood pressure 146/92 mm Hg, and respiratory rate 20/min. The skin and conjunctivae were pale, but there was no adenopathy, and there were no other positive findings. She was taking lithium carbonate, amitriptyline, and alprazolam for manic depression, and erythromycin.

A radiograph of her chest showed a small area of right upper lobe atelectasis; the infiltrate seen three weeks earlier had resolved. Her potassium was 5.4 mEq/L, BUN 18 mg/dl, creatinine 1.2 mg/dl, total bilirubin 2.2 mg/dl with conjugated bilirubin of 0.2 mg/dl, and LDH 441 IU/L. CBC revealed a WBC count of 22,000/cu mm, PCV 22%, platelet count 496,000/cu mm, MCV 94.2 cu μ, RDW 15.5%, and a mild left shift on differential. Urinalysis showed a trace of hemoglobin, 2 to 5 RBC/HPF, and 2 WBC/HPF.

On admission to the hospital for further evaluation, she was found to have a severe normochromic, normocytic anemia. Her serum iron was 209 μg/dl, total iron binding capacity (TIBC) 342 μg/dl, normal B_{12} and RBC folate, and reticulocyte count 6.2%. The haptoglobin was less than 5.5 mg/dl, direct Coombs' test was positive for C3, serum IgM was elevated, and repeat cold agglutinins were positive at 1:512. Bone marrow aspirate and biopsy showed a mildly hypercellular marrow with erythroid hyperplasia. Serum complement fixation titers for *Mycoplasma pneumoniae* were elevated.

The diagnosis was acute cold agglutinin-induced hemolytic anemia, probably due to her mycoplasma infection. She was transfused with warm, washed packed red blood cells to relieve her profound weakness. She was given a trial of oral prednisone, and the erythromycin was continued. Her hemolysis resolved in about seven days, and she was discharged to home with close follow-up. The hemolysis did not recur.

Discussion

Anti-red blood cell antibodies that bind with a greater affinity in cold environments are termed cold agglutinins. By fixing complement, they lyse red blood cells and produce an autoimmune hemolytic anemia. Cold agglutinin hemolytic anemia has been associated with many antecedent infections, including mononucleosis, cytomegalovirus, mumps, and bacterial endocarditis. However, among the associated infections, *Mycoplasma pneumoniae* is by far the most frequent.[1]

Some authors believe that *M. pneumoniae* and human red blood cells share similar antigenic specificity. The red blood cell I antigen is most commonly involved, and *Mycoplasma* as well as other microorganisms do produce similar antigens. However, there is no direct proof of this mechanism. Other authors believe that infection with *M. pneumoniae* alters the I antigen and renders it more susceptible to autoimmunity.[2]

Most cold agglutinins are a heterogeneous group of polyclonal IgM antibodies. Their ability to bind red blood cells is usually inversely proportional to the temperature, with a peak titer at approximately 4°C. Additionally, complement must be fixed to lyse red blood cells. This process, in contradistinction, requires warmth. Therefore, the thermal amplitude, or the highest temperature at which antibody will still bind red cells (usually 32°C) determines the clinical significance of the cold agglutinin. If the thermal amplitude is unusually low, complement is not active and no cells are lysed despite avid antibody binding; if the thermal amplitude is high (e.g., near body temperature), even a small titer of antibody will provoke complement fixation and thus clinically significant hemolysis. This phenomenon explains why cold agglutinin titer, measured by most laboratories at 4°C, does not correlate with extent of clinical disease.[1]

The primary physical sign of cold agglutinin hemolytic anemia is acrocyanosis of exposed regions, mainly the nose, earlobes, and distal extremities; it is exacerbated by cold weather. In postinfection syndromes, the onset is usually acute and abrupt, lasting one to three weeks. Laboratory findings can include profound anemia, reticulocytosis, mild hyperbilirubinemia, low to absent haptoglobin, positive direct Coombs' test, and cold agglutinin titers of 1:64 to 1:1,000,000. Antibody titer returns to normal within four weeks of the initial infection.[2]

Treatment of infection-associated cold agglutinin hemolytic anemia presents few challenges, as the disease is usually benign and self-limited. Keeping the patient warm is the simplest and most effective intervention; one group resorted to the use of a NASA space suit to provide constant warmth in a rare patient

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Presented by Laura F. Weikert, M.D., fellow in pulmonary and critical care medicine, Vanderbilt University Medical Center, and Rufus C. Davis, M.D., chief medical resident, St. Thomas Hospital, Nashville.

with profound disease.[3] Red blood cell transfusion should be reserved for patients with severe anemia and cardiovascular compromise. Only washed cells should be administered to avoid replacing complement components, thus possibly accelerating hemolysis. There have been anecdotal reports of the beneficial use of corticosteroids,[4] but no controlled trials; most authors do not recommend that routinely.[1,2]

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Cocaine-Associated Chest Pain: A Case of Aortic Dissection

Case Report

A 33-year-old man arrived at the VA triage complaining of severe chest pain. He had a history of ethanol-induced gastritis and cocaine abuse, and he told of having smoked "crack" cocaine the night before, followed two hours later by sudden sharp left-sided chest pain that radiated down his left arm and into his left jaw. It did not change in character with respirations, cough or positional changes, and was accompanied by nausea and mild diaphoresis. He had never had any similar sensation before this episode.

When seen in an emergency room near his home, he was thought by his history to have myocardial ischemia. When an electrocardiogram showed no abnormalities, and nitrates, calcium-channel blockers, and aspirin provided no relief of his pain, he was transferred for further evaluation. He appeared well but anxious, with a supine blood pressure of 132/62 mm Hg in both right and left arms. Physical examination revealed normal neck veins and carotid pulses. He had a 2/6 diastolic murmur along the left sternal border, and his lungs were clear. Electrocardiogram showed no changes from previous studies. A transthoracic echocardiogram showed severe aortic insufficiency and no pericardial effusion. Transesophageal echocardiography demonstrated a proximal aortic dissection with an entry flap seen at the sinotubular junction and extending to the descending aorta.

He was taken immediately to the operating room, where his ascending aorta was replaced without complications. His postoperative course and was uneventful and he was discharged on the sixth postoperative day. A repeat surface echocardiogram prior to discharge showed only trivial aortic insufficiency. He continues to do well.

Discussion

This case represents an uncommon association found between cocaine and cardiovascular disease: aortic dissection. It has become increasingly important for clinicians to be aware of the varied effects of cocaine on the heart and systemic circulation as the use of cocaine becomes more widespread.

Cocaine is found in the leaves of the Erythroxylon coca plant. It is absorbed by all mucous membranes, intranasal inhalation being a common means of administration. Cocaine can be injected intravenously and, in its crystalline form (crack cocaine), it can be smoked. Once absorbed by any of these means, cocaine acts to inhibit the presynaptic re-uptake of the catecholamines norepinephrine and dopamine, thus increasing their local concentration. The resulting sympathomimetic response is manifested clinically by tachycardia, hyperthermia, hypertension, and euphoria.[1]

Most of the cardiovascular effects of cocaine are attributed to catecholamine excess. Acute myocardial infarction is a commonly described result of cocaine use and has been attributed to cocaine-associated coronary vasospasm. Also, the increased myocardial oxygen demand resulting from cocaine use can lead to ischemia if there are areas of fixed coronary stenosis. Although the mechanisms are incompletely understood, some studies have shown that cocaine may lead to accelerated atherogenesis and a tendency to thrombosis, both of which would increase the risk of myocardial infarction.[1,2]

In several case reports, cocaine use has been associated with acute aortic dissection.[3] The acute hypertensive and hyperdynamic cardiovascular responses to cocaine are believed to result in an abrupt increase in the shear forces on the endothelial surface of the aorta, which is then postulated to be the initial event resulting in an endothelial tear and eventual aortic dissection.[1,3] While quite plausible, this explanation is as yet unproven.

The accurate determination of the cause of this patient's cocaine-associated chest pain was essential. Since myocardial infarction is commonly seen in people who use cocaine, even young and otherwise healthy patients, clinical suspicion for ischemic heart disease must always be present. Many of the medications used in treating angina pectoris and myocardial infarction, however, especially anticoagulants and thrombolytics, would have had a devastating effect in this man. While aortic dissection is apparently uncommon in this situation, it should be considered when evaluating patients with chest pain and a history of cocaine use. ❑

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Zidovudine for the Reduction of Perinatal Transmission of Human Immunodeficiency Virus

DEBORAH K. YODER, M.S.N., R.N., C.S.

Approximately 7,000 children are born to human immunodeficiency virus (HIV)-infected mothers each year. With a prevalence of HIV infection of about 1 in 625 in women giving birth, the number of infected infants can be expected to increase, based on increasing rates of HIV infection in women. The majority of HIV-infected infants in the United States acquire the virus by vertical transmission from the mother, either during pregnancy or during labor and delivery.[1] HIV is currently the seventh leading cause of death in children 1 to 4 years of age, and the fourth among women 25 to 44 years of age.[2]

The Acquired Immunodeficiency Syndrome (AIDS) Clinical Trials Group recently reported the results of a randomized, placebo-controlled trial to evaluate the efficacy, safety, and tolerance of zidovudine (ZDV) for the prevention of vertical transmission of HIV.[1] ZDV [brand name: Retrovir, formerly called azidothymidine (AZT)] is an inhibitor of the in-vitro replication of some of the retroviruses, including HIV. Randomly assigned HIV-infected pregnant women received oral ZDV five times daily, initiated at 14 to 35 weeks of gestation and continued throughout pregnancy. A continuous intravenous infusion of ZDV was administered during labor until delivery, and the infants born to these women received ZDV syrup every six hours beginning 8 to 12 hours after birth, and continuing for six weeks.[2]

Interim analysis of the data from the births of 180 treated subjects and 184 controls concluded that there was significant evidence of treatment efficacy. The trial was stopped in order to offer the ZDV treatment to the women in the placebo group.[2] The trial demonstrated that the administration of ZDV to the treated subjects reduced the vertical transmission of HIV by 67.5%. This risk reduction is highly significant statistically. The estimated rate of vertical transmission in the control group was 25.5% compared with 8.3% in the treated group.[1]

The only adverse maternal or fetal effect in the study group was a mild transient neonatal anemia. The long-term risks of ZDV used in this manner are not known. Also unknown is whether or not such treatment with ZDV during pregnancy will produce resistance to ZDV should the drug be required subsequently for the woman's health.[2] However, the dramatic reduction in HIV transmission in the National Institutes of Health study indicates that every HIV-infected pregnant woman should be offered ZDV therapy to reduce the risk of transmission to her baby. A woman should make her decision about receiving therapy after discussing the benefits and risks for herself and her child with her physician.

In response to these findings, the Tennessee Department of Health has recently begun offering HIV testing as part of the routine initial battery of laboratory tests performed on all pregnant women seen in health department prenatal clinics. Prior to the new report, HIV testing was offered to women only if they fell in certain high-risk groups. Counseling will now be given regarding the significant benefit to the infant of treatment of an HIV infection in the mother during pregnancy, as well as counseling regarding any recognized risks to the infant.

Should a pregnant woman test positive for HIV, the health department may elect to provide ZDV treatment and/or continue to provide prenatal care contingent upon the availability of trained, experienced medical personnel and appropriate consultation and delivery arrangements. Other referrals as appropriate may be made, including referral to private specialists, HIV clinics, hospital-based prenatal programs, or to the appropriate regional perinatal center. A further development was the release on February 21, 1995, by the Centers for Disease Control and Prevention (CDC) of draft guidelines for HIV counseling and voluntary testing for pregnant women. The CDC sought public comment during the period February 23 through April 9, 1995, with the draft guidelines to be modified as needed and published in a future issue *of Morbidity and Mortality Weekly Report.*

The combined strategy of HIV counseling for all pregnant women and voluntary HIV testing is already proving effective in several communities. Voluntary testing means that after a woman receives appropriate

(Continued on page 274)

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Preventive Medicine Series

Primary Prevention of Hypertension

SUZANNE SATTERFIELD, M.D., Dr.PH

Elevated blood pressure is a significant cause of morbidity and mortality due to stroke, coronary heart disease, and renal disease. Controlled clinical trials have confirmed that treatment of established hypertension with medication decreases the risk of cardiovascular disease.[1,2] Unfortunately, detection and treatment of hypertension alone do not provide a complete solution to the consequences of hypertension because of several factors.[3] First, the prevalence of hypertension is high. Approximately 50 million people, or one in every four adults, in the United States have hypertension, defined as under treatment with antihypertensive medication, systolic blood pressure of 140 mm Hg or higher, or diastolic blood pressure of 90 mm Hg or higher.[4] Many of these persons with hypertension are unaware of their elevated blood pressure and suffer serious sequelae before treatment is started. Even persons aware of their hypertension are often not adequately treated by medication. Antihypertensive medications can be costly, and are not without adverse effects.

Therefore, promotion of the primary prevention of hypertension is an important part of an overall program to decrease the serious consequences of elevated blood pressure.[3] There are two approaches to primary prevention of hypertension. In the population-based approach, an intervention to lower blood pressure is applied to the general population with the goal of achieving a downward shift in the distribution of blood pressure. A 2 mm Hg shift downward in the distribution of diastolic blood pressure is estimated to result in a 17% reduction in the prevalence of observed diastolic hypertension, a 15% reduction in the incidence of stroke, and a 6% reduction in the incidence of coronary heart disease.[5] In the targeted approach, a blood pressure lowering intervention is aimed at persons at high risk of developing hypertension because of family history, high normal levels of blood pressure, obesity, physical inactivity, high alcohol intake, or high sodium intake. The Working Group on Primary Prevention of Hypertension has recommended a national effort including both the population and targeted strategies.[3]

Cross-sectional and observational studies have suggested several lifestyle or nonpharmacologic interventions that may reduce blood pressure and prevent the development of hypertension in population or targeted approaches to prevention. Weight loss, reduced sodium intake, reduced alcohol consumption, and increased physical activity have been shown in clinical trials to be effective in lowering blood pressure. Managing stress, supplementing intake of potassium, calcium, or magnesium, increasing dietary fish oil or fiber, or altering macronutrients are of limited or unproved efficacy as approaches to prevention of hypertension.[3]

Three randomized, controlled trials have tested lifestyle or nonpharmacologic interventions in persons with high normal blood pressure. In the Primary Prevention of Hypertension Trial,[6] 201 persons were randomized either to a multifactorial intervention consisting of weight loss, reduced sodium and alcohol intake and increased physical activity, or to a monitored control group. Participants were followed every six months for five years. There was a significantly greater fall in weight in the intervention than in the control group (-2.7 kg, $P<0.001$), and urinary sodium output was reduced in the intervention group by 25% compared to 6% in the control group ($P<0.001$). Average net change in blood pressure between the intervention and control group was -1.3 mm Hg in systolic blood pressure and -1.2 mm Hg in diastolic pressure. In spite of small to moderate intervention effects, the final incidence of hypertension in the intervention group (8.8%) was less than half that of the control group (19.2%, $P=.027$).

The Hypertension Prevention Trial[7] tested four dietary counseling regimens (reduced calories, reduced sodium, reduced calories and sodium, and reduced sodium and increased potassium) in 841 persons. The dietary counseling resulted in a 10% reduction in sodium and a 4% reduction in weight after three years. The largest net reduction in blood pressure occurred in the calorie reduction group (-2.4/-1.8 mm Hg, $P=0.031$). There were no statistically significant effects of sodium counseling on blood pressure, and the reduced sodium plus calorie counseling regimen was less effective than calorie counseling alone. The combination of reduced sodium and increased potassium had no additional effect on blood pressure over the effect of reduced sodium alone. The incidence of hypertension was lower in all dietary counseling groups than in the controls, but the differences were not consistently statistically significant.

In the Trials of Hypertension Prevention-Phase I,[8] three lifestyle interventions—weight loss, sodium reduction, and stress management—and four nutritional

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supplements—calcium, magnesium, potassium, and fish oil—were tested in 2,182 men and women. After 18 months of follow-up, there were significant net changes in weight (-3.9 kg, $P<.01$) and in blood pressure (-2.9/-2.3 mm Hg, $P<.01$) in the weight loss group compared to the control group. There was a corresponding, significant 51% decrease in the incidence of hypertension in the weight loss group compared to the control group. The sodium reduction group had significant net changes in sodium excretion (-43.86 mmol/24 hr, $P<.01$) and in blood pressure (-1.7/-0.9 mm Hg, $P<.05$) compared to the control group. Stress management and supplementing calcium, magnesium, potassium, and fish oil intake did not result in significant blood pressure reductions.

These three trials demonstrate that relatively simple interventions that can be performed in the physicians' offices—dietary counseling and encouraging weight loss, decreased alcohol intake, and physical exercise—are effective in the primary prevention of hypertension. Three ongoing trials will add to our knowledge on the optimal strategies to prevent hypertension. The Trials of Hypertension-Phase II is examining whether weight loss alone, sodium reduction alone, and the combination of weight loss and sodium reduction will reduce blood pressure and the incidence of hypertension over three to four years in 2,382 men and women.[9,10] These interventions were selected for testing in a long-term trial based on the success observed with weight loss and sodium reduction in Phase I.

Dietary Approaches to Stop Hypertension (DASH) is a multicenter, randomized, controlled feeding trial designed to compare the effects of three dietary patterns on diastolic blood pressure in 456 men and women with systolic pressures under 160 mm Hg and diastolic pressures of 80 to 95 mm Hg.[11] The three dietary patterns to be compared after the eight-week intervention period are a "typical" American pattern (low in potassium, magnesium, calcium, and fiber) as the control diet; a pattern that is high in fruits and vegetables with a fat, protein, and calcium content similar to that of the control diet; and a low-fat dietary pattern that is high in fruits, vegetables, and low-fat dairy products. Finally, the Prevention and Treatment of Hypertension Study (PATHS), a multicenter, randomized, controlled trial in 580 veterans, is testing whether blood pressure and left ventricular mass are reduced by alcohol moderation over six months in nondependent moderate to heavy drinkers with above-average normal (80 to 89 mm Hg) and mildly hypertensive (90 to 99 mm Hg) levels of diastolic blood pressure.[12] These and similar research initiatives will partially fulfill the recommendations of the Working Group on Primary Prevention of Hypertension.[3]

These and other future studies will continue to expand our knowledge base about the factors that reduce the incidence of hypertension, and it is hoped, the morbidity and the excess mortality associated with that disease. In addition, increased efforts in the education of health care professionals, the general public, the food industry, and food service institutions on the significant blood pressure lowering effects of weight loss, sodium reduction, reduction in alcohol intake, and increased physical activity are all necessary components of an effective national campaign to prevent hypertension. ❑

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Department of Health Report . . .

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counseling from her health care provider, she is able to make an informed decision about having a test for HIV. Studies show that after a pregnant woman talks with her physician about the test and what it means for her and her baby, most women choose to be tested and then to be treated as their physician recommends. In one inner-city hospital in Atlanta, 96% of women chose to be tested after being provided HIV counseling and offered voluntary HIV testing as part of their prenatal care. ❑

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Loss Prevention Case of the Month

The Long Tail

J. KELLEY AVERY, M.D.

Case Report

Medical malpractice insurance is looked upon as a business in which the claims have a "long tail." The following is a "tail" which is perhaps not a record, but certainly long enough to justify the reputation. The acts in this case that the plaintiff described as negligent occurred about a month after your company wrote its first policies.

A 32-year-old woman reported to her private Ob/Gyn early in 1976. She gave a history of having had her last menstrual period in November 1975. Her physical findings were compatible with that history and an EDC was assigned of mid-August of 1976. Blood pressure was 140/80 mm Hg, pulse 80/min, and her usual weight 140 lb. She was said to be 5 ft 2 in tall. Her weight on this first visit was 152 lb. All her blood studies were normal with the PCV 33%, and the urine was negative for protein. She gave a history of having a G6PD deficiency and the record notes that certain drugs were to be avoided.

She was seen regularly every month, the only remarkable finding being weight gain. By 28 weeks she had gained almost 40 lb over her usual reported weight of 140 lb. At this visit she was put on a low-calorie and low-salt diet, and she was cautioned that she must lose some weight. Two weeks later she had lost 1 lb, but on this visit her urine protein was reported as 2+. Two weeks later, at about 32 weeks gestation, her weight was stable, and she had no edema, but her blood pressure was 150/100 mm Hg and her urine showed 4+ protein. There was no documentation of any discussion of rest, medication, or any other intervention for her findings. Two weeks later she had gained an additional 4 lb, her blood pressure was 140/100 mm Hg, and her urine was 3+ for protein. Eclampsia was mentioned in the record and hospitalization was discussed, but the patient was sent home on a regimen of rest, diet, diuretics, and mild sedation with phenobarbital. Two days later, at about 35 weeks gestation, the patient had a convulsion and was brought to the hospital.

At this time the FHT was said to be "good," and her blood pressure 170/130 mm Hg. Treatment was begun with $MgSO_4$ IV, with intravenous hydralazine given for the elevated blood pressure, and she was prepared for surgery. Within four hours of the convulsion the uterus was emptied by C-section. Prior to that time, on EFM tracing there had been noted some "decelerations."

The infant was delivered with amniotic fluid grossly stained with meconium. There was no spontaneous respiration at delivery but with stimulation respirations started and the Apgar scores were reported at 3 and 6. The baby appeared to do fairly well after a shaky start, but developed increasing respiratory problems and was transferred to the NICU about 18 hours after birth.

The baby was discharged from the hospital with spastic quadriplegia and has been followed in a multidisciplinary clinic all his life. At 9 years of age, the child could walk with the aid of a walker and could feed but not dress himself. At 13 years of age, a lawsuit was filed on behalf of the child against the obstetrician, alleging the failure to appropriately manage the mother's toxemia. The lawsuit further charged that there was a delay in performing the C-section once eclampsia had developed. This negligence was said to be the cause of the baby's disabilities.

Loss Prevention Comments

For a month before this pregnancy was terminated there were signs of preeclampsia. The blood pressure was up and there was significant proteinuria. One wishes there had been more documentation in the record of the physician's thoughts about these abnormal findings. Did he strongly urge hospitalization and the patient refuse? Did he talk with her about the danger to herself and the baby that could result from this condition? Should the doctor have admitted his patient as an emergency two weeks before the convulsion when her blood pressure was 150/100 mm Hg and her urine was 4+? There is no doubt that the latter would have been the safer course. Rest could have been enforced, the hypertension could have been more vigorously treated, and the convulsion possibly avoided.

This lawsuit could have been handled differently from a legal perspective if all the things mentioned had been done. Would the more vigorous handling of the clinical manifestations of preeclampsia have prevented the disability in the baby? That is certainly open to question. Serious questions are being successfully raised about cerebral palsy and its relation to an antepartum event rather that something that happened during labor and delivery. Cord blood examinations frequently help to determine the condition of the baby at the time of delivery. Placental examinations are being done with increasing frequency to attempt to relate the infant's problems to conditions that can be present in utero.

Currently, this case would have been handled differently! Obstetricians are much more alert to the consequences of proteinuria and hypertension now than they were 19 years ago. Not only are the clinical consequences better understood and the management more aggressive, but the legal consequences are certainly more apparent. The case was filed at age 13 of the child. It was settled at age 16 for a large amount of money.

Medical malpractice insurance; a long tail business? Yes, medical malpractice insurance is a *Long Tail Business!* ❑

Dr. Avery is chairman of the Loss Prevention Committee, State Volunteer Mutual Insurance Company, Brentwood.

The Case of the Month is taken from actual Tennessee closed claims. An attempt is made to fictionalize the material in order to make it less easy to identify. If you recognize your own case, please be assured that it is presented solely for the purpose of emphasizing the issues presented.

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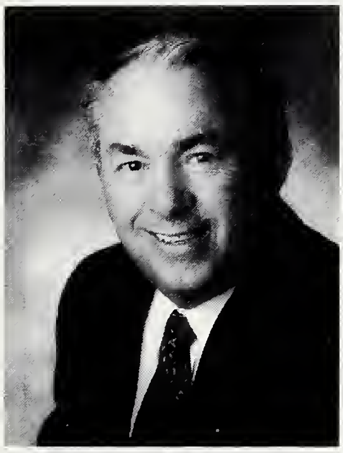

ROBERT E. BOWERS

Ethics and Managed Care

Ethics. Webster defines it as: (1) A *discipline* dealing with *good* and *evil* and with *moral duty.* No other profession or life's calling or career typifies the essence of the meaning of ethics better than the *discipline* of medicine. From its onset, medicine's premise has been one of moral duty. In the delivery of patient care, we physicians make daily decisions regarding such things as treatment methods and costs that may place us in an ethical dilemma.

Now, the question arises, "Can we maintain our basic medical ethics and also practice in a managed care delivery system?" It's a question on the lips of our patients, it's the question resounding in physicians' lounges. How can the two co-exist?

And yet, managed care per se is not an unethical form of delivery of health care. In and of itself, managed care is no more unethical than fee for service is unethical. What can make it unethical is the way in which those delivering the care approach their delivery. For instance, in fee for service, if you give too much care, or you order testing unnecessarily because you need to pay your overhead, that's unethical. We have lived with those ethical dilemmas for most of our medical lives.

In the traditional fee for service system, all of us have witnessed doctors and other providers giving care that we may question or see as unnecessary, and sometimes solely for the purpose of economic gain. In some managed care delivery systems, providers may be tempted to deliver less than ideal medical care simply because their reimbursement may be greater for delivering less care. The system is not necessarily corrupt, the method of payment is not corrupt; the inherent danger lies with the giver of the care and whether or not he subscribes in his heart and in his behavior to the ancient medical creed, "First do no harm." Obviously, if one withholds medical care or delivers unneeded medical care, one certainly runs the risk of harming the patient. If either is done because of the monetary gains or losses, then that is unethical.

An excellent reference source is the Report from the Council on Ethical and Judicial Affairs of the American Medical Association. It is a good place to revisit our fundamental beliefs (*JAMA* 273:330-335, Jan 25, 1995).

Without physicians' commitment to place the patient's interest first and act as agents for their patients alone, there is no assurance that the patient's health and well-being will be protected, irrespective of the payment system. The incentives in managed care are probably no greater to withhold care than to give too much care under our present system. It is impossible for physicians to totally control delivery and payment methods, but it is not impossible for us to place the patient's interest first. In the changing health care arena in which we find ourselves, it is paramount that we understand the ethical issues involved in the delivery of care.

The debate about whether the managed care delivery system is ethical will no doubt continue, but at the heart of the matter is the ethics of the giver of that care, and how he views the *patient*-doctor relationship. The patient must come first.

Robert Bowers MD

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JULY, 1995

editorials

V-E Day Disremembered:
An Independence Day Remonstrance

Tomorrow is the 50th anniversary of V-E Day. I suppose V-E is one abbreviation that requires no translation, or I certainly hope it doesn't. If it does, all those honored dead died in vain. Considering that, I suppose also that you may think the title odd, or at least the first part of it, so I shall enlighten you. It has nothing to do with the importance of the event, which was certainly a giant step in the right direction. But it was only a step, still far from the end of the fighting and killing and dying, which would go on for several more months. Except for President Truman's courageous decision to use the atomic bomb, it might have been even longer—by as much as several years. For the information of all you baby-boomers who are now deploring Mr. Truman's decision as inhumane and arbitrary, you should remember that a contrary decision would have guaranteed that the father, and even sometimes the mother, of a large number, perhaps even most, of you, would have been absent from your starting gate, thereby eventuating in your turning up missing at any subsequent roll call.

Besides, you seem to have forgotten who it was started the shooting in the first place, and have taken to labeling the United States the aggressor and Japan the victim. What else can one expect, though, when just the other day I heard a sixth grader in a Detroit school explain to a commentator on PBS that no one had ever told them that the Japanese bombed Pearl Harbor, thereby involving the United States in the war. I find that not to be an isolated instance. It is a travesty and a national disgrace.

Important as all that is, though, it still isn't the reason for the title. The newspapers have been filled for the past few days with reminiscences of people about celebrations that took place on May 8, 1945, and I guess there were. Most of the people doing the remembering were school children then. One older man said that on May 8 he was doing what he had been doing for the previous 700 days, which was trying to stay alive. He had been in a Nazi concentration camp. What I was doing on that day was what I had been doing for the previous few weeks, which was trying to keep other people alive in a hospital emergency room. I was at the time an intern working in the ER in what is now referred to in Columbus as the "old Starling-Loving Hospital," which was then the teaching hospital of Ohio State University. It was replaced after *The* War (that's *my* war) by a huge (comparatively) shiny new one. During that rotation I was working 36 hours on and 12 off, and I remember thinking that considering the alcohol titer in the ER that day, some celebrating must have been going on. There were so many sick and wounded coming through the ER on any day that it was hard to make any judgment about numbers, except that maybe the non-PID proportion was a little higher that day than usual. I'd be something less than surprised if that proportion hadn't reversed sometime later on, attributable to V-E Day celebrations. But I digress.

That's the reason, then, for the first part of the title. I simply don't remember much about V-E Day because I was too busy. And anyway, I was anticipating being somewhere in the South Pacific before Christmas. My wife, then a bride of less than a year, disclaims any particular recollections, as well, living as she was in anticipation of the arrival of our first child in a couple of months. What I do remember vividly is V-J Day. Now *there* was a celebration. I was at Camp Lee, Virginia at the time, having gone on active duty and gained a daughter between the two V Days. But more about that another time. What this really is about is not V Anything day, but Independence Day.

I was born two and a half years after the end of the First World War, or, as it continued to be known as until the second one started for the United States and I was already in medical school, *The* World War. (As I recall, everyone called the second one simply "The War" while it was going on and for some time after it was over, since for everyone then alive all other wars, no matter how vast or bloody, paled into insignificance. The rest of its present name was added later.) President Woodrow Wilson had persuaded a strongly isolationist, somewhat anti-English, and more than somewhat anti-French citizenry that the Allies must be victorious in order to make the world safe for democracy. Further, it was billed as the "war to end all wars." Thanks to British Prime Minister Lloyd-George and French Premier Clemenceau, the peace terms imposed on Germany were not only humiliating and insufferable, but also unenforceable, the League of Nations that the victorious powers had formed being totally effete and ineffective, and in less than 15 years Germany was trying out its new war machine, especially the Luftwaffe's dive bombers, in Spain. Within 20 years, after quickly breaching France's "impenetrable" Maginot Line, German forces were once again overrunning Europe, and in short order the World was once again decidedly unsafe for democracy, or anything else, for that matter.

Winston Churchill once said that Democracy is the worst form of government there is—except all the rest. For more than 200 years we have been paying with blood, sweat, tears, and money, not necessarily in that order, first to gain the freedom to govern ourselves as we please, and then to preserve that freedom. With the fall of the Berlin wall and the return of constitutional government to the fragmented former Soviet Union, it looked again as if democracy had it made. Lately a lot of us have been doing a second take, as today the prize still seems just as elusive as ever. It appalls me that so many in high places are still laboring under the misapprehension that all remains well. Everywhere one turns one finds wars and rumors of wars.

One would think that unlike the days when Jesus spoke of rumors of wars, modern communication technology available these days could quickly dispel any rumors and settle them one way or the other. Wars used to be packaged pretty neatly, or at least so says conventional wisdom, making it immeasurably easier for one to know who his enemies were. Today things are different. For instance, a clean-cut young man in camouflage fatigues looking every inch a soldier from the nearby station walks in and rents a van, which he loads with explosives, and with which he proceeds to demolish a modern government building and its occupants, none of whom had done or meant him any harm. The blast was instantly assumed to be the work of Middle-East terrorists. The information that the terrorism had come from within indicated there was in play a whole new ball game. What that ball game is depends upon whom you ask. (Actually, it wasn't a new ball game at all; it was ever thus. Disaster has always lurked around every corner, which is why I long ago adopted the philosophy that I was not going to quit living just to "play it safe." If the Oklahoma bombing did nothing else, it should have convinced everybody that there is no such thing as safe.)

I am not one of those who thinks the government is necessarily my enemy, or at least not except in specifically defined situations. On the other hand, neither do I tend to think of government as my friend—any government, and ever. Governments are at best a necessary—I started to say evil, though that may be too harsh a word, at least today in the United States. It also may not be. Perhaps I should have stopped the sentence with "necessity." At the same time, there are those, including, I should guess, Mr. McVeigh, who think of our government, and maybe any government at all, as evil. When such mavericks prevail, the danger is that "every man [of them will do] what is right in his own eyes." While I grant that those in the present federal administration are singularly lacking in vision, and maybe, I also grant, theirs is no better than Mr. McVeigh's, their eyes have not been proved evil—at least not yet—I think. His eye has.

Our freedom was dearly bought and has been dearly sustained. The danger in such a situation as is now upon us is that a great hue and cry will go up, "Save us, O thou Great Father who dwelleth in Washington, from our enemy within!" An even greater danger is that Our Father who dwelleth in Washington will perceive such a cry where there was none, and act as if there were. The price for protection is loss of liberty—the greater the protection, the greater the price, and I'm not speaking of money, either, or at least not particularly. Though that cost is not minor, it is comparatively insignificant.

Walter Cronkite has become the grandfather figure of a large number of people in the United States, because, I suppose, he projects a grandfatherly image exuding vast wisdom and empathy, and that image receives wide exposure from the news media. I don't necessarily buy it, because I'm about as old as he is, and I remember what the younger generation doesn't, which is that he arrived at his exalted position by sometimes employing rather devious means and also not always unsullied reportage in his early days. Nonetheless, I don't begrudge him his admiration, and am just as happy it was he who got there and not some others I could name.

Mr. Cronkite's name has been mentioned, I'm not sure how prominently, as a potential candidate for president on the Democratic ticket. He responded with the disclaimer that the people would not want him for president once they found out that the first thing he would do would be to take away every firearm from every individual who was not either a peace officer or in the armed services. I hope he's right—that the people wouldn't want him, I mean. I do not speak as a member of the National Rifle Association, because I'm not one—yet. It's not, either, that I'm an advocate of an armed citizenry. It's rather that I see the necessity for an *armable* citizenry—a quickly armable one. I know the arguments on both sides, and I find specious and naive the argument of the NRA that "guns do not kill people; people kill people," even though it is obviously literally true. A great many innocent people are dead who would not have died had there been no gun around. There are hazards to living, and that is one of the hazards of living in a free society. That hazard is minor, though, compared to the hazards faced every day in an unfree society. Just ask any of the vast army of people who have fled those lands and now live in the United States.

Certainly, not all of those newly freed may think an armable citizenry would have been the answer to the problems in those countries, and neither do I. It is only one of the necessary ingredients. The underground movements in Europe during and even after the Second World War found it both necessary and effective. They still do. A recent column in *The Wall Street Journal* reporting on the militias in this country indicated that though such movements are attractive to the lunatic fringe, the militias generally comprise and are often led by some of the more substantial members of society. We should never lose sight of the disdain with which the leaders of the American Revolution were viewed by the British, both there and here. Our forebears were, in fact, looked upon as criminals. We need also to be aware that many of those in positions of power in our own country, and particularly many of the bureaucrats, hold the "pee-pull" in disdain.

Neither keeping nor not keeping the world safe for democracy has ever guaranteed safety for its inhabitants. The lion was not meant to lie down with the lamb until the Millennium. Before that came Armageddon, which hasn't happened yet, though it might be close on us. Such a utopia exists otherwise only in the dreams of fuzzy-brained idealists, and in the dreams of despots, in which dreams some of the sheep are their own wolves wearing sheep's clothing. For protection and survival, the sheep need either more and better shepherds, or else to maintain eternal vigilance and, unfortunately, in these times of uncertain and uncommitted shepherds, firepower. After all, shepherds have been known to eat their sheep and sell their hides.

Unfortunately, as with Christmas and Thanksgiving, the *raison d'etre* of Independence Day has been obscured by cloaking it in trivia. George and Tom and Patrick and all those other hardy patriots to whom we owe so much must be spinning in their graves. Moreover, the liberal revisionist historians are trying their immoral best to obscure them and their immortal deeds in trivia, or at the very least by dwelling on sometimes imaginary sexual indiscretions to ensure that their memory is besmirched.

It seems high time for the citizenry of the United States of America, borrowing from the words of Mr. Lincoln, to "highly resolve that . . . [our] honored dead shall not have died in vain, and that government of the people, by the people, and for the people shall not perish from the earth." Its greatest danger nowadays comes from getting itself, or worse, *putting* itself, into the hands of the bureaucracy which art in Washington, whither it hath already gone far too far. We took a giant step toward its emancipation last November. But that was a battle won. It was not the war.

In any case, changing the guard can be a snare and a delusion. The war can also be lost by considering perfidy the sole property of a single political party and not remembering that it comes with the turf. As I observed earlier, there's no such thing as "safe." Sleep with one eye open.

J.B.T.

in memoriam

Claude P. Ledes, age 62. Died April 25, 1995. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby Medical Society.

John Housden Lane Marshall, age 61. Died April 23, 1995. Graduate of George Washington University School of Medicine. Member of Knoxville Academy of Medicine.

Ben Richardson Mayes, age 82. Died April 20, 1995. Graduate of Vanderbilt University School of Medicine. Member of Nashville Academy of Medicine.

Kenneth Boyd Rule, age 76. Died May 5, 1995. Graduate of University of Tennessee College of Medicine. Member of Knoxville Academy of Medicine.

new members

The *Journal* takes this opportunity to welcome these new members to the Tennesssee Medical Association.

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Nilesh Patel
Pauline C. Reed
Leigh Strickler
Kristen L. Wilson

TMA Members Receive AMA Physician's Recognition Award

The following TMA members qualified for the AMA Physician's Recognition Award during April 1995. This list, supplied by the AMA, does not include members who reside in other states.

Physicians can receive the PRA certificate valid for one, two, or three years. For the one-year award, physicians report 50 hours of continuing medical education, including 20 hours of Category 1; for the two-year award, physicians report 100 hours of CME, including 40 hours of Category 1; for the three-year award, physicians report 150 hours of CME, 60 of which are Category 1. Each application for the PRA must also verify participation in Category 2 CME activities.

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R. Wayne Raymond, M.D., Jackson
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announcements

CALENDAR OF MEETINGS

NATIONAL

Sept. 5-10	American Academy of Neurological and Orthopaedic Surgeons—Ballys, Las Vegas
Sept. 8-14	American College of Emergency Physicians—Hyatt, Washington, D.C.
Sept. 8-14	American College of Radiology—Westin Copley Place, Boston
Sept. 9-12	American Electroencephalographic Society—Renaissance, Washington, D.C.
Sept. 13-16	American Society for Surgery of the Hand—San Francisco
Sept. 14-16	American Academy of Facial and Reconstructive Surgery—Sheraton, New Orleans
Sept. 16-22	American Society of Clinical Pathologists—Hilton, New Orleans
Sept. 17-20	American Academy of Otolaryngology–Head and Neck Surgery—Sheraton and Marriott, New Orleans
Sept. 21-23	American College of Clinical Pharmacology—Holiday Inn Crowne Plaza, Rockville, Md.
Sept. 21-24	American Academy of Family Physicians—Marriott and Hilton, Anaheim, Cal.
Sept. 28-30	Central Society for Clinical Research—Drake, Chicago

Actions of the Tennessee State Board of Medical Examiners

April, 1995

Name: David Campbell, M.D. (Crossville)

Violation: Prescribing a controlled substance for an addicted person without making a bona fide effort to cure the patient's habit.

Action: Per agreed order, must complete additional continuing education and contract with the Impaired Physician Program; assessed civil penalty of $500.

Name: Henry Gindt, M.D. (Memphis)

Violation: Unprofessional conduct.

Action: Per agreed order, license placed on probation for 18 months; must complete 150 hours of continuing education.

Name: Haller S. Henderson III, M.D. (Memphis)

Violation: Engaging in the practice of medicine when mentally or physically unable to do so.

Action: Per agreed order, license voluntarily retired; cannot be reinstated without appearing before the Board.

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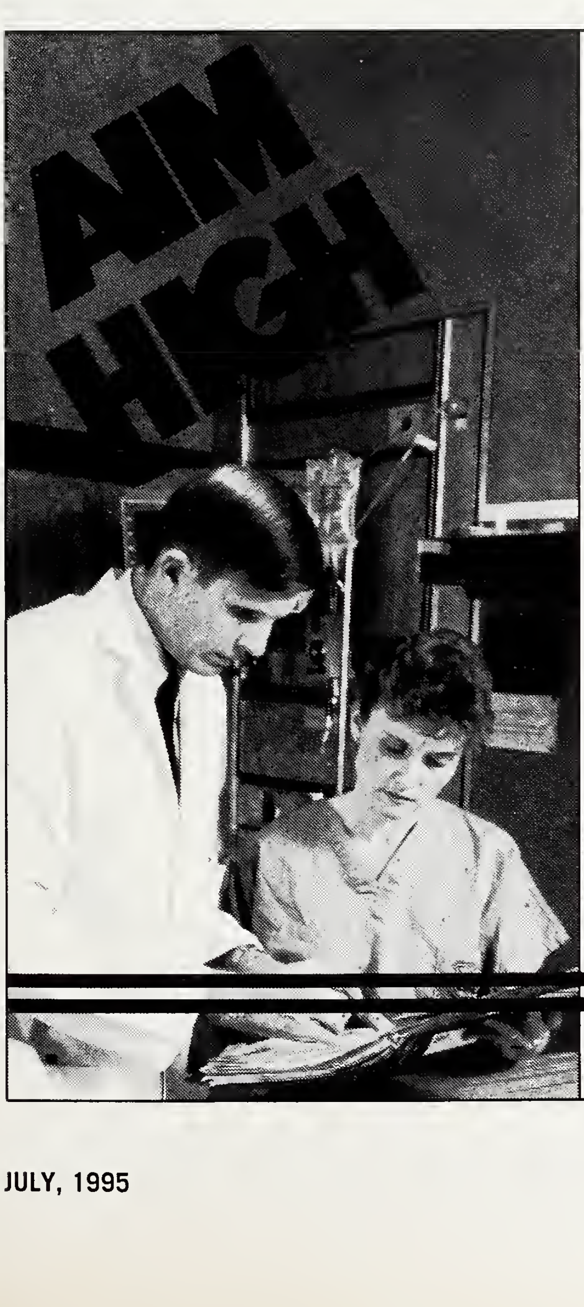

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Highlights of the TMA Board of Trustees Meeting

April 6 and 9, 1995

The following is a summary of actions taken by the Board of Trustees of the Tennessee Medical Association at its regular second quarter meeting in Nashville, April 6 and 9, 1995. THE BOARD:

Impaired Physician Program

Received an informational and educational report on the year's activities of the Impaired Physician Program from Dr. David Dodd, medical director of the Tennessee Medical Foundation.

Health Facilities Commission

Agreed to submit the names of Drs. Ronald Homra, Jackson; Virgil Crowder Jr., Lawrenceburg; and Sam Barnes, Cookeville, for consideration of appointment to the Tennessee Health Facilities Commission.

Board of Medical Examiners

Agreed to submit the names of Drs. Angelo Garbarino, Newport; Ted Haase, Knoxville; and David Garriott, Kingsport, for consideration of appointment to the Board of Medical Examiners.

Quarterly Reports

Received quarterly reports from: State Volunteer Mutual Insurance Company (SVMIC), IMPACT, and the Tennessee Delegation to the AMA.

Hospital Medical Staff Section

Agreed to reinstate the TMA Hospital Medical Staff Section as defined in the TMA Constitution and Bylaws, Chapter III, Section 12.

1994 Audit

Accepted the 1994 TMA audit as presented by Dr. Hays Mitchell, chairman of the Finance Committee.

Officer Elections

Elected Drs. Charles Womack III, Cookeville, as chairman of the Board, and David Garriott, Kingsport, as vice-chairman. Elected Dr. Michael McAdoo, Milan, as secretary-treasurer, and elected Donald H. Alexander as assistant secretary-treasurer.

Impaired Physician Loan Fund Inc.

Reappointed Drs. William Anderson, Luthur Beazley Jr., Murray Smith, and Charles Thorne, all of Nashville, and Michael McAdoo, of Milan, to the Board of Directors of the Impaired Physician Loan Fund, Inc.

Long-Range Plan

The Board agreed to devote time at the third quarter Board meeting to the continued development of the Long-Range Plan for the TMA.

Orthopaedic Physician Assistants

The Board agreed to take no position on legislation that would create a certifying authority within the Board of Medical Examiners for Orthopaedic Physician Assistants.

Chief Executive Officer

Agreed to name Donald H. Alexander as the Chief Executive Officer of the TMA upon the retirement of L. Hadley Williams.

Retiring Board Members

Recognized retiring Board of Trustees members Drs. David Gerkin, Knoxville; Hays Mitchell, McDonald; Barrett Rosen, Nashville; and Charles White, Lexington. A plaque was presented to each. ☐

Alzheimer's Disease and Related Dementias: Legal Issues in Care and Treatment, 1994

The Advisory Panel on Alzheimer's Disease issued a **special report to Congress** to focus attention on legal issues affecting people with Alzheimer's disease, their families, health care professionals, and society. This report contains public policy recommendations for resolving problems in legal competency judgments in cases of probable Alzheimer's disease and other related dementias.

Alzheimer's Disease and Related Dementias: Legal Issues in Care and Treatment, 1994, describes the following areas of law as they affect people with Alzheimer's disease and their families:

- autonomy and incapacity,
- voluntary transfers of decisionmaking (durable powers of attorney and trusts),
- involuntary transfers of decisionmaking (guardianships and conservatorships),
- medical decisionmaking (advance directives and refusals of medical treatment),
- the ethics of treating in the absence of advance directives,
- federal involvement in medical decisionmaking.

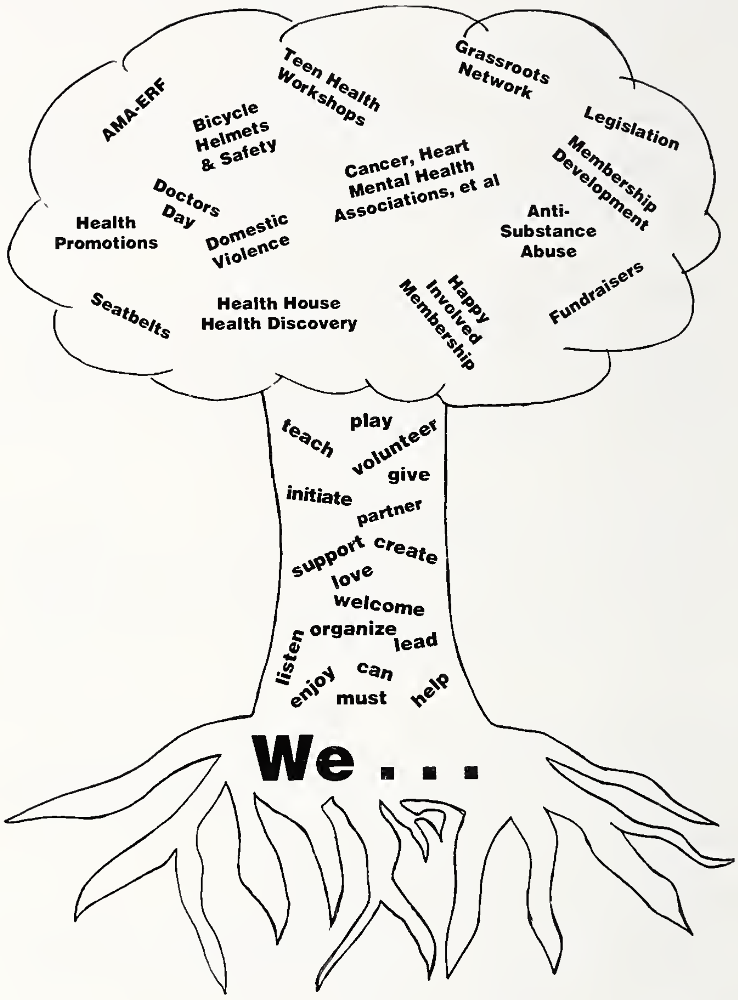
Single copies of this report (publication no. Z-86) are available **free** from the Alzheimer's Disease Education and Referral (ADEAR) Center by calling toll-free: **(800) 438-4380.**

Alliance Starts 1995-96 Year

The theme of the Alliance this year is "We . . . ." Using the tree as an image, this theme was introduced at the Annual Meeting in Nashville in April. The physicians' spouses (a.k.a. spice) are the root of the Alliance accomplishments, with the trunk made up of action verbs such as teach, play, support, create, advocate, love, organize, and listen. The full crown of the tree is made up of the results of our work: AMA-ERF fund raising, Teen Health Workshops and Teen Health Fairs, happy, involved membership, the Domestic Violence Traveling Exhibit, legislative work, and many others. We have something for everyone, so please encourage your "spice" to become involved in a meaningful relationship with the Alliance!

We have gotten off to Jump Start '95 in May, with three regional workshops held across the state. Beginning in the West Region in Jackson May 16, these day-long workshops were conducted in the Middle Region in Franklin on May 17 and in the East Region in Morristown on May 18. Barbara Marshall, our AMAA field director, came to share AMAA resources and ideas with the leadership from across the state. She conducted special workshops for the presidents, and was the luncheon speaker. At the request of the membership, all training workshops were held at the regional level this year. The goal was to increase the number of people attending this valuable training, which, in turn, helps each of our Alliances to do an even better job. Workshops for AMA-ERF, Legislation, Membership, and Health Promotions were conducted for the chairmen of each local society component. Presidents-elect and treasurers also met with the state chairmen to plan the year's activities.

After lunch, each group met with a facilitator, who talked about the effects of all the medical changes we are all facing and about some of the ways in which we can work to help each other in times of change and crisis. This is a time for cohesiveness, and not division. We need each other!



We are looking forward to spending the year sharing our activities with you. We're very proud of our excellent national reputation as leaders of the AMAA. This year, in fact, we had the president and president-elect of Missouri come to our Convention to find out how we do things. Imagine how proud we were to find that Annabel Woodall had won the Belle Chenault Award for Political Involvement! Thank you very much for helping us honor her at the AMA/AMAA Annual Meeting in Chicago in June. We were poppin' our buttons with pride!

We're indeed off to a Jump Start on the Alliance year!

Lyn Overholt
TMAA President

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Published in this section are many educational opportunities which come to our attention which might be of interest to our membership. As some of these are very long, full year schedules, and others are detailed descriptions of courses, in order to conserve space, most of them will be published in only one issue of the Journal.

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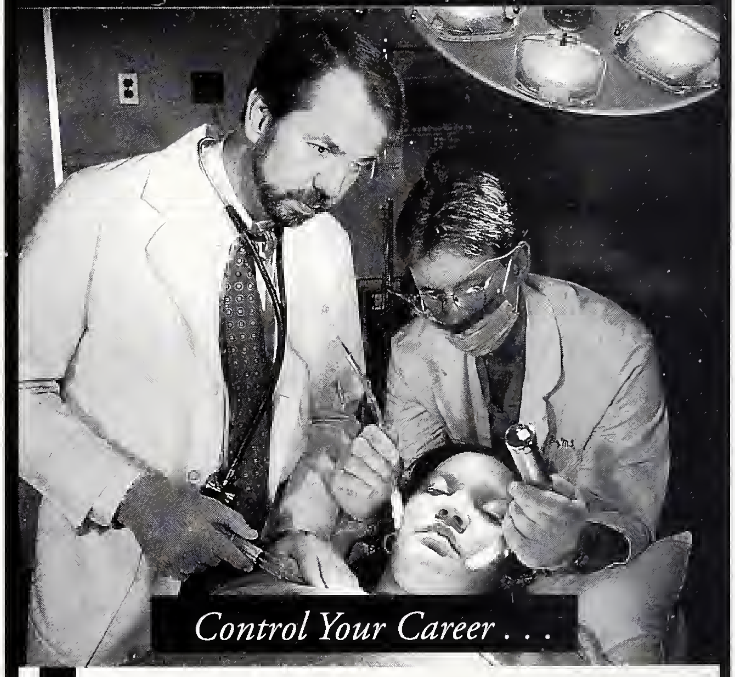

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Lady Windermere's Syndrome: An Atypical Presentation of an Atypical Mycobacterium

RYLAND P. BYRD, JR., M.D.; SAAD MIRZA, M.D.; and THOMAS M. ROY, M.D.

Introduction

Nontuberculous mycobacteria (NTM) were not accepted as human respiratory pathogens until the 1950s, as they were believed to have relatively low virulence, and to infect only patients with preexisting lung disease. They were frequently documented as a commensal in the airways. In contrast to tuberculosis, the pulmonary infection caused by "atypical" mycobacteria showed little tendency for human-to-human transmission.[1]

Improved technology for diagnosing *M. tuberculosis* now includes the Bactec culture and polymerase chain reaction amplification of DNA segments. These rapid identification tools have also led to a greater recognition of NTM lung infection.[2]

Respiratory infection with *Mycobacterium avium intracellulare* (MAI) of patients without AIDS is now understood to have two major expressions.[3] The best known is upper lobe cavitary disease in a male tobacco smoker who has chronic obstructive lung disease. The radiographic pattern mimics tuberculosis. This presentation accounts for about 80% of all MAI pulmonary infections.[4]

The smaller group of patients has no apparent underlying lung disease and a negative or minimal smoking history. This group comprises women primarily (80%). The radiographic appearance consists of small nodular or interstitial disease that is often associated with cylindrical bronchiectasis.[5] Interestingly, the disease is commonly confined to the lingula and/or the middle lobe, and has been named "Lady Windermere's syndrome."[6]

We report two cases of patients who fulfill the criteria of Lady Windermere's syndrome, and review the current impact of MAI pulmonary infection in such individuals.

Case Reports

Case No. 1. A 79-year-old white woman was referred for evaluation of a chronic nonproductive cough that began insidiously several years earlier. The patient had never smoked, and had had no noxious environmental exposures. She had no pets or livestock, nor had she traveled recently. The patient was an urban dweller without outdoor interests or activities, and had no risk factors for human immunodeficiency virus (HIV). She had no symptoms of gastroesophageal reflux and denied exposure to tuberculosis. The personal and family history was negative for pulmonary disease.

The patient was thin and afebrile, and in no distress. Her vital signs were stable. There was no pectus excavatum or scoliosis. Breath sounds were clear, and auscultation of her heart was normal, as was the remainder of her physical examination. During the interview the patient attempted to suppress her cough and avoid expectoration by tightly covering her nose and mouth with a handkerchief.

From the Division of Pulmonary Medicine, James H. Quillen College of Medicine, East Tennessee State University, Johnson City, and the Mountain Home Veterans Affairs Medical Center.

Reprint requests to Pulmonary Division 111B, Veterans Affairs Medical Center, Mountain Home, TN 37684 (Dr. Roy).

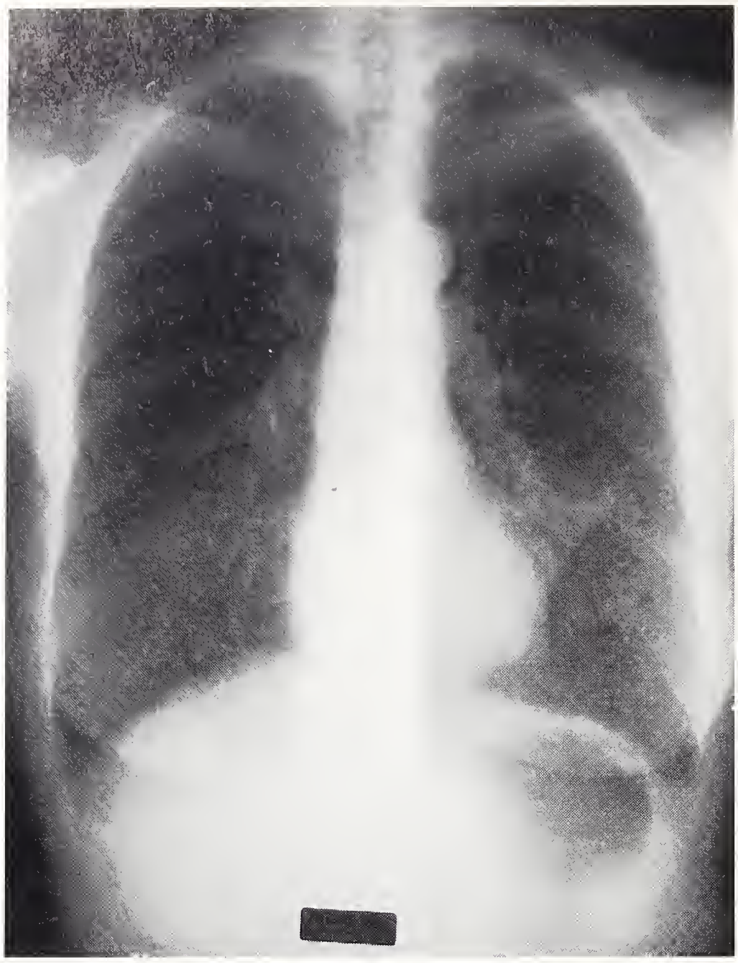

Figure 1. Chest roentgenogram demonstrating a lingular infiltrate.

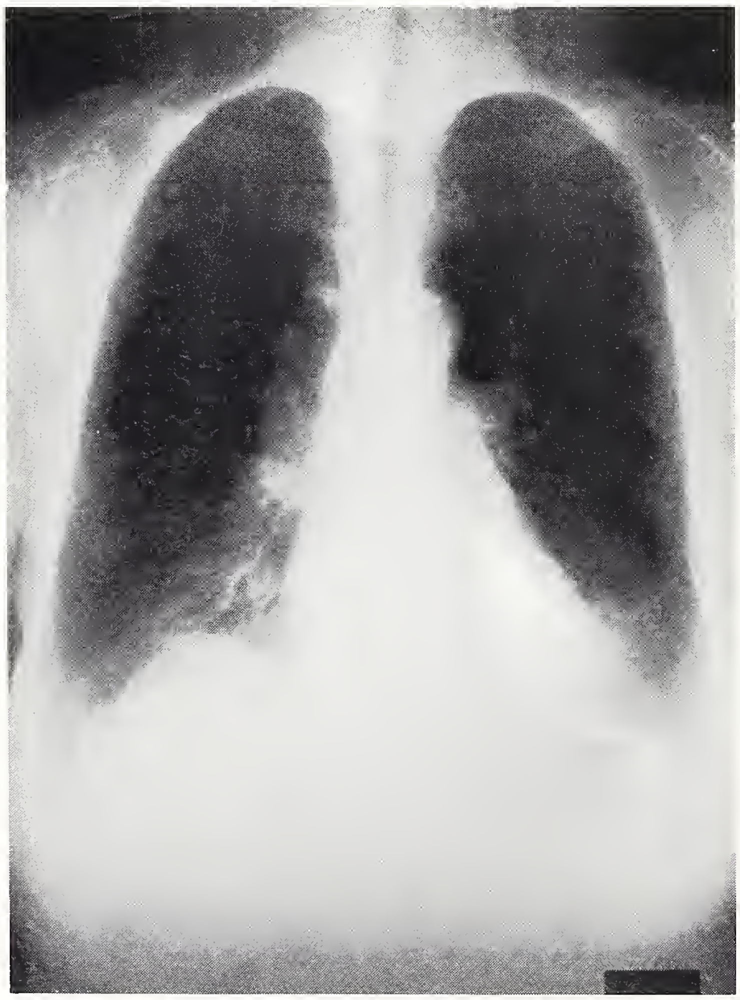

Figure 3. PA chest film with lingular infiltrate.

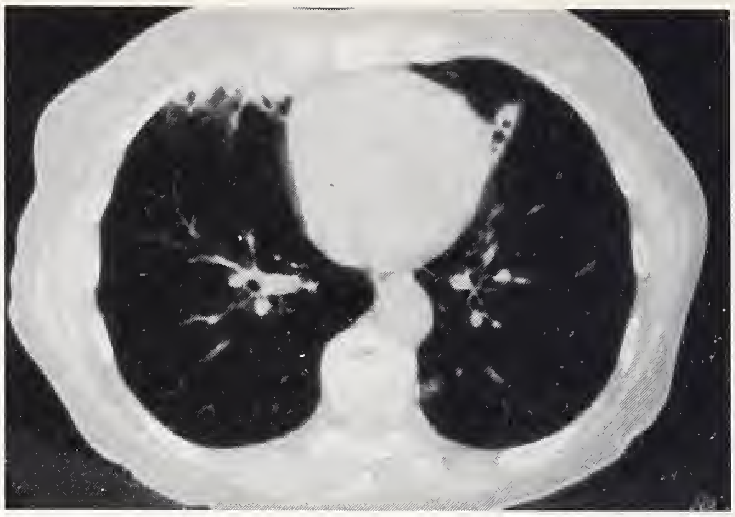

Figure 2. CT documenting a lingular and right middle lobe infiltrate.

The patient's white blood cell count and differential were normal, and her biochemical profile was unremarkable. A standard intradermal PPD test was nonreactive. She was seronegative for HIV antibody, and the antinuclear antibody was negative. Echocardiogram demonstrated minimal aortic valve sclerosis and a normal mitral valve.

A lingular infiltrate was apparent on chest roentgenogram (Fig. 1). CT confirmed the lingular infiltrate and also documented a right middle lobe infiltrate that had not been previously appreciated (Fig. 2). Bronchoscopy documented scarring within the lumens of both the lingular bronchi and that of the right middle lobe. Transbronchial biopsies and endobronchial brushings were nondiagnostic. Acid-fast bacilli were identified in the bronchoalveolar lavage fluid from both sites, cultures of which grew MAI. This was confirmed by DNA probe.

Case No. 2. An 81-year-old white woman had a persistent cough that had been a daily problem for one year but was only occasionally productive of white sputum. She denied hemoptysis and dyspnea, or any symptoms suggesting sinusitis, allergy, or gastroesophageal reflux. She had never smoked tobacco, had no significant occupational or recreational exposures, and had no known exposure to tuberculosis. She had essential hypertension controlled with 30 mg sustained release nifedipine.

The patient was mildly obese. She was in no respiratory distress, and her vital signs and physical examination were

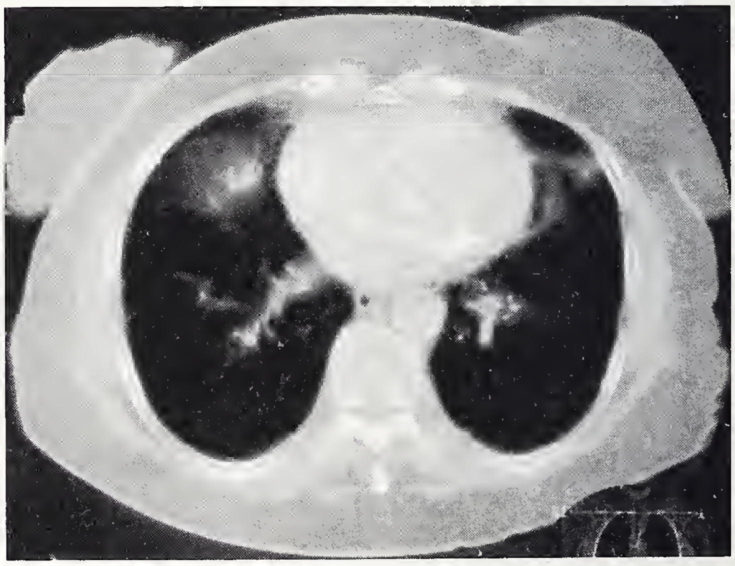

Figure 4. CT of the chest showing a middle lobe infiltrate in addition to the lingular density.

normal except for rhonchi in the left base anteriorly. She voluntarily suppressed her cough during the examination.

Laboratory data and intradermal PPD were unremarkable. Echocardiogram suggested mild mitral valve prolapse. The PA and lateral chest radiographs showed a lingular infiltrate (Fig. 3), confirmed by CT, which also identified a right middle lobe infiltrate not apparent on the standard films (Fig. 4).

Bronchoscopy revealed tenacious mucus in the openings to the lingula and right middle lobe. Bronchoalveolar lavage of the lingula recovered acid-fast organisms that proved on culture to be MAI, verified by DNA probe.

Discussion

The signature of Lady Windermere's syndrome is an elderly woman without preexisting lung disease, with radiographic evidence of lingular and/or right middle lobe infiltrates thought to be secondary to infection with an opportunistic pathogen, particularly MAI.[6]

The lingula and right middle lobe have long, narrow bronchi, which may predispose them to poor hygiene and irritation.[7] Nonspecific inflammatory processes are so frequently present in these lobes that they are considered unfavorable sites for open lung biopsy.[8] In a recent study, it was proposed that an individual must generate greater tussive effort to clear secretions from these regions of the lung than from other segments. The residual secretions incite inflammation and serve as a nidus for infection. The authors, attempting to explain the predominance of elderly women, surmised that they are more likely than others to regard expectoration as socially unacceptable. Continual cough suppression is hypothesized as placing women at greater risk of developing inflammatory processes in the lingula and the middle lobe.[6] Recalling the fastidious nature of the central character in Oscar Wilde's play "Lady Windermere's Fan," the symptom complex was dubbed Lady Windermere's syndrome.[6]

Other explanations for this opportunistic infection in a host without apparent underlying diseases have been offered. Since a significant number of the women have evidence of mitral valve prolapse, some investigators believe that a type of multisystem connective-tissue disorder is the predisposing factor, though despite intensive interest such a disorder has not been identified or characterized.[9] A high prevalence of pectus excavatum and thoracic scoliosis has also been documented, implying that architectural problems of the chest wall may further hinder the ability to clear the lingula and right middle lobe. One of our patients had mild mitral valve prolapse, but the other manifested none of these risk factors.

The radiographic appearance of MAI infection in the normal host is predominantly an interstitial pattern of consolidation with nodules.[5] A recent study using CT suggests that mild bronchiectasis is also present, and, when seen with small pulmonary nodules, correlates with MAI infection.[10]

The optimal treatment of MAI in patients without known predisposing pulmonary or immunosuppressive diseases has yet to be elucidated. Favorable results have been obtained with combinations of three to five of the antituberculosis drugs.[2,11] Clarithromycin, however, has been shown to be effective as a single agent in the treatment of MAI pulmonary disease.[12]

Clinicians familiar with the adverse effects of treatment combinations that employ antituberculosis agents may pause at the thought of instituting such therapy for an apparently indolent infection in an otherwise healthy host. On the other hand, the expression of pulmonary MAI infection in women shows a 90% response rate when treated with the intent to cure,[2] and four individuals with MAI and without other underlying disease are reported to have died when treatment was withheld.[6]

In summary, it appears that MAI causes respiratory illness in patients without predisposing disease. In women, this pulmonary infection often presents itself with radiographic infiltrates and small nodules that are confined to the lingula and/or the middle lobe. A greater awareness of this symptom complex should provide a greater understanding of the pathogenicity of MAI. ❑

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Lactobacillus fermentum Endocarditis Involving a Native Mitral Valve

GAIL H. GALLEMORE, M.D.; RICKY T. MOHON, M.D.; and DONALD A. FERGUSON, PH.D.

Introduction

Lactobacillus has not been regarded as a pathogen in the normal host. It is a ubiquitous organism of the oropharynx, the gastrointestinal tract, and the female genital tract. It is believed to protect the body from pathogenic organisms by competitive inhibition.[1-3] *Lactobacillus* species may take up to 16 days to grow in blood cultures, and is therefore often discarded before the organism can be identified. In addition, since *Lactobacillus* is a fastidious gram-positive rod and may be confused with diphtheroids on gram stain, it is often discarded as a contaminant.[2]

Previous reports have documented 43 cases of *Lactobacillus* endocarditis,[4-11] but only three occurred in the pediatric population,[4,8,11] and *Lactobacillus fermentum* has not previously been reported as a cause of endocarditis. We describe a patient with *L. fermentum* endocarditis involving a native mitral valve, and discuss her successful medical therapy using the combination of high-dose penicillin and an aminoglycoside.

Case Report

A 16-year-old girl was admitted to Johnson City Medical Center with sudden onset of aphasia and right hemiparesis. Five days earlier she developed shortness of breath and decreased exercise tolerance, after three months of chronic fatigue and intermittent fevers to 101°F. A heart murmur had been detected during a bout of acute appendicitis nine months before admission. An echocardiogram at that time documented a clefted, insufficient mitral valve. The patient had no history of past drug abuse. She had had previous dental procedures, including removal of braces ten months earlier, and dental cleaning six months before admission. Penicillin prophylaxis had been given for dental procedures after her mitral valve disease was discovered. Her dietary history was remarkable for a large daily consumption of milk and milk products.

On physical examination her temperature was 98°F, pulse rate 127/min, respiratory rate 21/min, and blood pressure 131/72 mm Hg. She was alert but aphasic. No retinal hemorrhages were seen. Splinter hemorrhages were noted in her nail beds and petechiae on the dorsum of the right foot. There was a grade 3/6 harsh pansystolic murmur without a diastolic component at the cardiac apex and radiating to the axilla. She had a moderate right hemiparesis.

The initial laboratory work showed a hemoglobin of 7.4 gm/dl, hematocrit 23.7%, sedimentation rate 75 mm/hr, and WBC count 8,200/cu mm with a differential of 78% neutro-

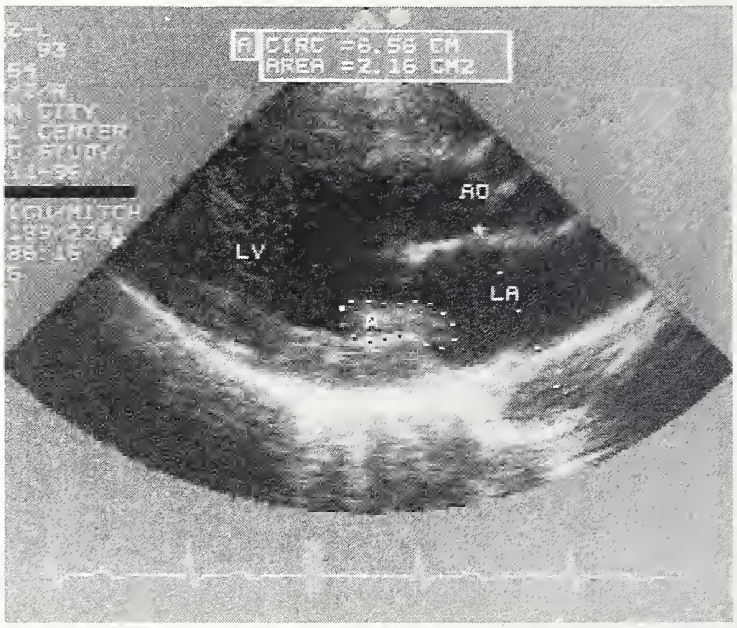

Figure 1. Admission echocardiogram showing the 1.0 × 1.5-cm pedunculated vegetation on the posterior leaflet of the mitral valve (circle).

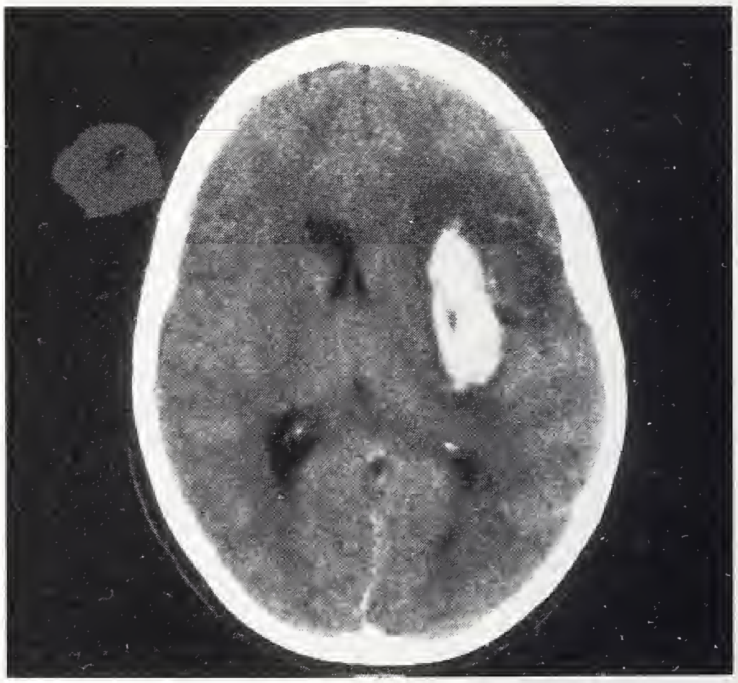

Figure 2. CT scan taken shortly after admission showing a hemorrhagic infarct of the left frontoparietal lobe of the cerebrum, presumed secondary to an embolus from the mitral valve vegetation.

From the Department of Pediatrics, James H. Quillen College of Medicine, East Tennessee State University, Johnson City.

Reprint requests to Department of Pediatrics, James H. Quillen College of Medicine, East Tennessee State University, P.O. Box 70578, Johnson City, TN 37614-0578 (Dr. Gallemore).

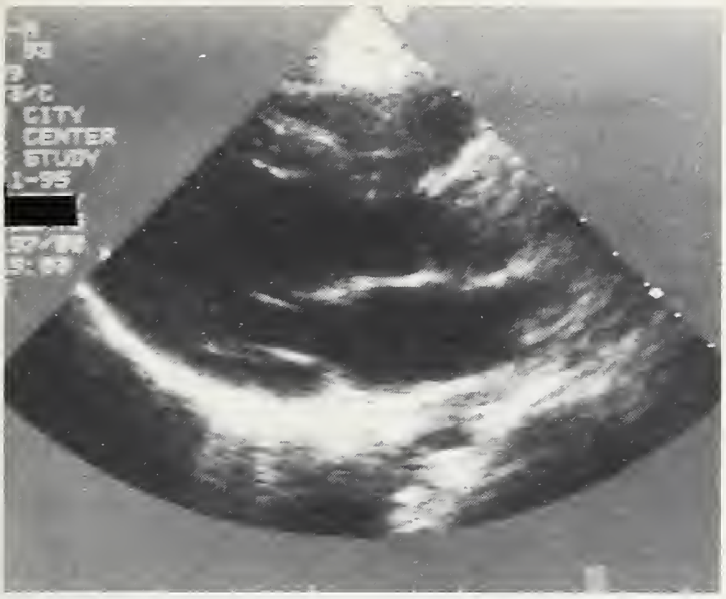

Figure 3. Echocardiogram after six weeks of IV antibiotics showing complete resolution of the vegetation.

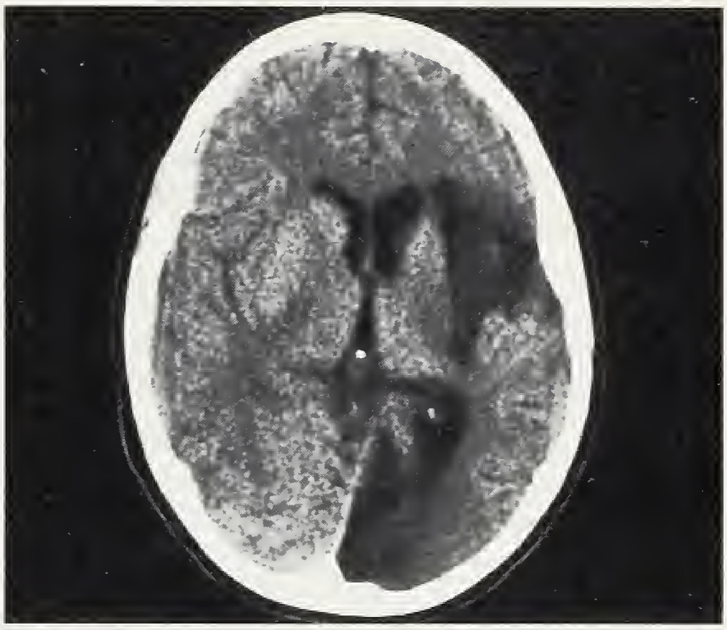

Figure 4. Follow-up head CT scan after six weeks of antibiotics showing no abscess and some liquefactive necrosis of the brain in the area of the infarction.

phils, 16% lymphocytes, and 5% monocytes. Rheumatoid factor was elevated at 36 IU/ml. Coagulation studies, urinalysis, antinuclear antibody, and biochemistries were all normal. Chest radiograph and electrocardiogram were normal. An echocardiogram revealed a 1.0 × 1.5-cm pedunculated vegetation on the posterior leaflet of the mitral valve, mitral insufficiency, and normal left ventricular function (Fig. 1). Computed tomography (CT) of the head confirmed a left frontoparietal lobe hemorrhagic infarct with shift effect on the left lateral ventricle (Fig. 2). Two of three blood cultures were positive at 24 hours for gram-positive rods. Subsequent blood cultures were negative after the initiation of antibiotic therapy.

Initial intravenous antibiotic therapy using ampicillin and gentamicin was changed to high-dose penicillin and gentamicin (dosage adjusted by following serum levels) after identification of *Lactobacillus* species was confirmed. Her initial hospital course was complicated by increased intracranial pressure requiring intravenous decadron and mannitol, and a brief course of mechanical hyperventilation. CT scan of the head revealed increasing cerebral edema in the first two days, but this had gradually resolved by day 5. Valvular surgery was discussed, but not performed because the child was improving and had no evidence of central nervous system progression. Her cardiac function remained stable, with only mild mitral regurgitation detected by echocardiography. A cerebral arteriogram was discussed to rule out abscess, but was also not required. The remainder of her hospital course was uncomplicated as she completed six weeks of the combined antibiotic regimen. At ten months after therapy was discontinued the patient has maintained a normal hemoglobin, WBC count, and sedimentation rate. Follow-up echocardiography showed gradual resolution of the mitral valve vegetation (Fig. 3). Residual mild hemiparesis and dysphasia persist but have improved with rehabilitative treatment. Follow-up CT scan of the brain at six weeks showed typical resolution of a hemorrhagic infarct (Fig. 4).

Bacteriology

Biochemical characterization was performed at the James H. Quillen College of Medicine, Department of Microbiology. *L. fermentum* was isolated and identified from two of three blood cultures, but the coccobacillary shape of the isolate made it difficult to distinguish from the coccal lactic acid bacteria, which produce lactic acid as either the sole or the primary product of fermentation. This isolate was heterofermentative, producing major lactic acid and minor acetic and succinic acids from glucose. The isolate was distinguished from *Leuconostoc* and *Pediococcus* by its failure to produce gas from glucose and by a positive reaction in the pyrrolidonyl arylamidase test (Rapid STREP, Biomerieux, Vitek, Inc., Hazelwood, Mo.).[2] *Streptococcus, Enterococcus,* and *Lactococcus* were eliminated by a negative reaction in the leucine aminopeptidase test (Rapid STREP),[2] and on the basis of a biochemical fermentation and enzymatic pattern that was inconsistent with all of the *Streptococcus* and *Enterococcus* species addressed by the Rapid STREP identification system.

Identification of a *Lactobacillus* species was made using pre-reduced, anaerobically sterilized (PRAS) media (Carr Scarborough Microbiologicals, Decatur, Ga.), and further subclassified to *L. fermentum* according to the method of Holdeman and associates.[12] The PRAS results were cross-referenced in *Bergey's Manual of Systematic Bacteriology*,[13] and were likewise consistent with *L. fermentum.*

Discussion

Our case is the first of endocarditis due to *L. fermentum* to be reported in the literature, and only three other pediatric patients with endocarditis due to other *Lactobacillus* species have been described. The history of mitral valve abnormality and previous dental procedures is common in other cases of endocarditis caused by *Lactobacillus*. Since the oropharynx, gastrointestinal tract, and female genital tract are known to be colonized by *Lactobacillus*, it is interesting to speculate that acute appen-

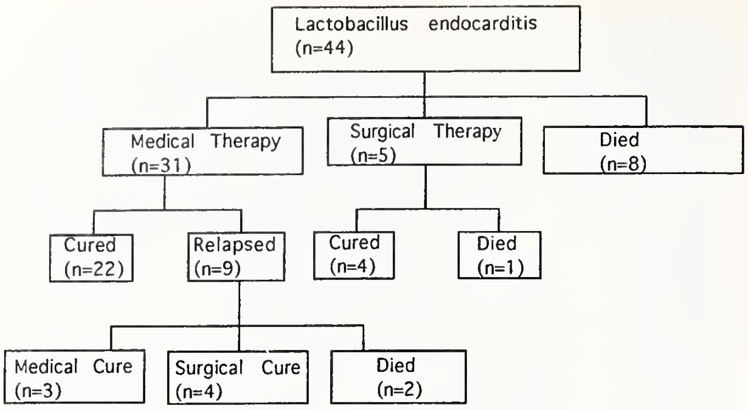

Figure 5. Outcome of various therapeutic regimens employed for *Lactobacillus* endocarditis: a summary of a review of the literature.

dicitis and/or large milk consumption may have contributed to the seeding of the mitral valve with *Lactobacillus* in our patient. Identification of the causative organism was made only by careful microbiologic observation and testing. Medical cure using high-dose penicillin and gentamicin for six weeks has been obtained in our patient.

Forty-three cases of *Lactobacillus* endocarditis have been summarized in previous reports.[4-11] In the review by Sussman and associates[8] 24 cases of *Lactobacillus* endocarditis were described. Eighty-three percent of these patients had preexisting structural heart disease, and 75% had some form of recent dental infection or manipulation. Griffiths and collaborators[5] reviewed 41 cases of *Lactobacillus* endocarditis reported in the literature and noted that medical cure without relapse or valve replacement was achieved in only 16 (39%). Relapses were reported in 14 of 41 (34%) and the overall mortality rate was 27% (11 of 41). Of the patients with relapses, ten had valve replacement for nonresponsive congestive heart failure, suppurative local complications, inability to sterilize the blood, or recurrent embolic phenomena.

A review of the literature including our case and 43 others [4,8,11] is outlined in Fig. 5. Medical cure was achieved in 25 cases (57%). *Lactobacillus* has a high propensity for embolizing the brain, with 14 of 35 having such an event; five of these patients died, and two of the remaining nine survivors were operated upon. Relapses were fairly common, occurring in nine of 31 medically treated patients, but only six of these 31 patients ultimately required valvular replacement. Five patients had valvular replacement at diagnosis with one subsequent mortality for a survival rate of 75%. The overall mortality rate was 25% (11 of 44).

The high morbidity and mortality support the importance of identifying the pathogenic organism and performing antimicrobial susceptibility studies. Bayer and associates[6,7] tested nine clinical isolates of *Lactobacillus* for minimal inhibitory and bactericidal concentrations (MICs and MBCs) and found a high incidence of unachievable MBCs (64%). They performed studies on two of the isolates and found the combination of penicillin and aminoglycoside to be synergistic. They concluded that high-dose penicillin should be used to treat *Lactobacillus* infections, and that the addition of an aminoglycoside should be considered for serious infections, such as endocarditis.

In summary, *Lactobacillus* is an uncommon pathogen in patients with bacterial endocarditis. It has been identified as the causative organism usually in patients with preexisting valvular heart lesions, particularly if a history of recent dental manipulations is obtained. Identification of the organism is complicated by both its long incubation period and its similar appearance to gram-positive coccoid and diphtheroid organisms. Because *Lactobacillus* organisms have a high antibiotic tolerance, studies of synergistic activities of combination antibiotics can be useful in guiding therapy. If *Lactobacillus* endocarditis is suspected, empiric treatment using high-dose penicillin and an aminoglycoside is recommended. Also, culture-negative endocarditis may be related to a *Lactobacillus* infection that has gone unrecognized. This case adds *L. fermentum* endocarditis to the other previously described species of pathogenic *Lactobacillus*. Our case supports the efforts to achieve a medical cure using high-dose combination antibiotic therapy to avoid relapse and potential need for valve replacement. ❑

Acknowledgment

We thank Dr. William R. Mayberry, professor of microbiology at James H. Quillen College of Medicine, for his help in identifying the *Lactobacillus* organism.

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Cardiac Arrest Following Vertebrobasilar Stroke

J. HOWARD JASTER, M.D.; LINDA M. PORTERFIELD, Ph.D.; TULIO E. BERTORINI, M.D.; F. CURTIS DOHAN JR., M.D.; and TIBOR BECSKE, M.D.

Cardiac arrest has not been reported to occur following ischemic strokes involving the vertebrobasilar circulation. Mikolich et al[1] reported a cardiac arrest following an ischemic stroke involving the carotid circulation, and several studies have suggested a risk of potentially lethal cardiac arrhythmias following strokes.[1-6] We describe two cases which suggest an increased likelihood of cardiac arrest six to nine days following vertebrobasilar ischemic strokes.

Case Reports

Case 1. A 75-year-old black man complained of sudden and persistent difficulty with both swallowing and walking. His diabetes mellitus (DM) and hypertension (HTN) were both well controlled. He had no history of coronary artery disease (CAD), myocardial infarction (MI), or arrhythmia. He was alert and oriented, but dysarthric, with Horner's syndrome involving the left eye. Abnormalities of gait and sensation supported the diagnosis of vertebrobasilar ischemic stroke. Routine admission laboratory tests that included electrocardiogram (EKG) were normal. A transthoracic echocardiogram revealed mild left ventricular hypertrophy and an ejection fraction of 45%. No thrombus was present.

The patient remained neurologically and hemodynamically stable until day 6, when unmonitored cardiopulmonary arrest occurred. Resuscitation was successful, and there was no evidence of stroke extension. He remained stable for another three days, during which testing for MI, pulmonary embolus (PE), infection, and metabolic derangement was negative. On day 9 ventricular fibrillation and cardiac arrest occurred. Resuscitation was unsuccessful, and the family refused postmortem examination.

Case 2. A 59-year-old black woman complained of sudden and persistent visual blurring, and weakness and numbness in both arms. Her DM and HTN were both well controlled. She had no history of CAD, MI, or arrhythmia. She was alert and oriented, but had only light perception in both eyes, and mild weakness of arms and legs bilaterally. The diagnosis was ischemic stroke in the territories of the posterior cerebral and basilar arteries causing cortical blindness and extremity weakness. Routine admission laboratory tests were normal, as was a 24-hour ambulatory EKG. A transesophageal echocardiogram revealed mild left ventricular hypertrophy, with a normal ejection fraction. No thrombus was present.

The patient remained neurologically and hemodynamically stable until day 8, when unmonitored cardiopulmonary arrest occurred. Two hours later, following endotracheal intubation and normalization of vital signs and metabolic parameters, ventricular fibrillation occurred, which responded to defibrillation. Testing for MI, PE, infection, and metabolic derangement was negative, but all of her neurologic deficits have persisted. Now, after two years of follow-up, she is otherwise doing well.

Discussion

Two patients had been neurologically and hemodynamically stable for one week following vertebrobasilar ischemic strokes when they suffered cardiac arrest. Both survived an initial cardiac arrest. There was no suggestion of antecedent CAD, MI, PE, infection, metabolic derangement, underlying arrhythmia, or recurrent stroke.

Lethal ventricular arrhythmias or asystole occur in 5% of all patients with stroke.[2] Specific arrhythmias follow hemorrhagic strokes at specific time intervals: sinus tachycardia occurs primarily on days 8 through 10, and multifocal premature ventricular contractions occur primarily on day 3.[3] Our patients had cardiac arrest within a specific time interval following stroke—within days 6 through 9. Though disrupted autonomic pathways within the brain may precipitate arrhythmias following acute stroke,[4,5] continuous EKG monitoring of patients with ischemic strokes is often considered unnecessary.[6]

We postulate that transient ischemia may have occurred in our patients in areas of the brainstem controlling cardiac and respiratory function, or in areas containing autonomic tracts. We found that resuscitation may be possible, and that the period of susceptibility to cardiac arrest may be limited to several days following stroke. We conclude that continuous EKG monitoring may be indicated for a period of several days following vertebrobasilar strokes. ❑

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Non-Hodgkin's Lymphoma, Hypercalcemia, and Elevated Calcitriol Levels: A Report and Review

RONALD H. LANDS, M.D

Introduction

Hypercalcemia is commonly associated with well differentiated B-cell neoplasms such as multiple myeloma. It is less often considered, though occasionally found, in other lymphoproliferative disorders. I describe an elderly patient with non-Hodgkin's lymphoma (NHL) accompanied by severe hypercalcemia and associated with an elevated 1,25-dihydroxycholecalciferol (calcitriol) level. This patient and a review of the literature display some of the features of this syndrome.

Case Report

A 71-year-old white woman had the abrupt onset of constipation, weight loss, polyuria, and fatigue. Small lymph nodes were barely palpable in the posterior cervical region of her neck. She had a mild normochromic anemia, and her serum calcium was elevated to 17 mg/dl (normal 9.0 to 10.6 mg/dl). She was treated with intravenous fluids and corticosteroids, and while the calcium improved, it did not return to normal.

The adenopathy worsened dramatically during the next week, the cervical nodes becoming bulky and new nodes becoming palpable in the inguinal and axillary regions. The architecture of an excised node was found to be diffusely effaced by large cells with noncleaved, prominent nuclei; there were abundant mitoses. Immunoperoxidase stains were positive for leukocyte-common antigen; the pan-B markers were positive and pan-T markers negative. The node was diagnosed as large cell NHL of B-cell origin, which was also found on bone marrow biopsy to be invading the marrow. Parathormone (PTH) was not detectable (<0.2), and 1,25-dihydroxycholecalciferol (calcitriol) was elevated to 120 pg/ml (normal 20 to 76 pg/ml).

She was treated with combination chemotherapy. Her course was complicated initially by development of tumor lysis syndrome. Subsequently, at the nadir of her marrow suppression, she developed sepsis, and died with multiorgan failure one month later.

Discussion

Hypercalcemia, with or without bone disease, is associated with a variety of lymphoproliferative disorders and assorted humoral mediators. Osteoclast activating factor (OAF) is the putative cause of hypercalcemia in myeloma, and probably accounts for the abnormal bone remodeling in other B-cell malignancies, including chronic lymphocytic leukemia, hairy-cell leukemia, and Waldenstrom's macroglobulinemia.[1] Angiotensin converting enzyme (ACE) and parathyroid hormone-like protein have both been found in some cases of NHL associated with hypercalcemia.[2,3] Hypercalcemia has been reported in acute lymphoblastic leukemia, but a mediator in this instance has not been isolated.[4] The syndrome of osteolytic bone lesions and hypercalcemia associated with human T-cell lymphotropic virus (HTLV-1)-related T-cell leukemia/lymphoma has been well documented. The association of aggressive non-T-cell NHL, bone lesions, and hypercalcemia has been reported rarely as well.[5]

Endogenously synthesized and dietarily acquired vitamin D are metabolized to their 25-hydroxy derivatives in the liver. These derivatives, the predominant circulating form of vitamin D, are further hydroxylated in the kidney to the 24,25-dihydroxycholecalciferol or 1,25-dihydroxycholecalciferol (calcitriol) metabolites. Calcitriol is the biologically most active metabolite, regulating both the intestinal absorption of calcium and the remodeling of bone.

There have been several reports of elevated calcitriol levels in people with NHL and hypercalcemia. Intermediate or high-grade tumors of B-lymphocyte origin are most commonly reported, but cases of T-cell NHL have been reported as well.[6-10]

While tissue from a malignant lymphoma will

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facilitate the conversion of the 25-hydroxycholecalciferol to calcitriol, it is not yet proven that the malignant cell is the source of the calcitriol.[11] Calcitriol-mediated hypercalcemia in lymphoma is usually characterized by hypercalciuria, undetectable or low PTH levels, and a normal serum phosphate. Calcium absorption in the gut is increased, and there are usually no detectable localized osteolytic bone lesions.[12] In the absence of hypercalcemia, there are often abnormalities in calcium metabolism manifested by hypercalciuria and calcitriol-calcium dysregulation.[13]

Corticosteroids are usually effective temporizing measures in the patient with calcitriol-mediated hypercalcemia. The best management of hypercalcemia complicating NHL is control of the tumor. Early stage disease may be managed by chemotherapy, with or without radiation therapy. Patients with advanced disease require combination chemotherapy such as cyclophosphamide, doxorubicin, vincristine, and prednisone (CHOP).

Hypercalcemia may be the predominant feature in high-grade B-cell NHL. Abnormalities of calcium homeostasis are probably present, but not recognized, in most patients with NHL.

Conclusion

High-grade NHL should be considered in a person with hypercalcemia, even in the absence of striking lymphadenopathy. ❑

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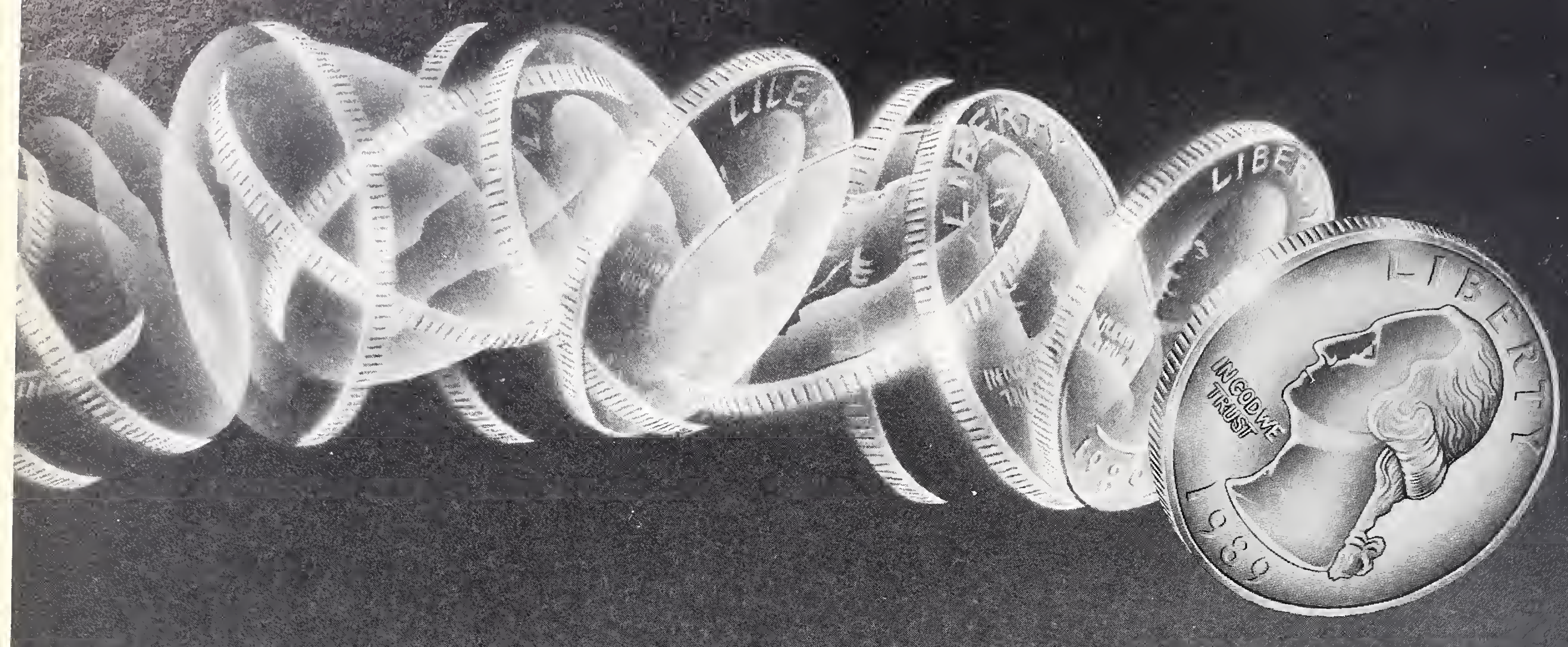

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Trauma Rounds

Electrical Injury as a Cause of Fracture

DAN DRINNEN, M.D. and BLAINE L. ENDERSON, M.D.

Introduction

Diagnosis of skeletal injuries resulting from electrical injuries is often delayed for various reasons, such as worry about the burns, or a low index of suspicion. When caring for victims of electrical injury, it is important to remember that such injuries may occur. We present below a case involving a left femoral neck fracture resulting from low-voltage electrical injury.

Case Report

A 33-year-old white man working on a rooftop was standing in a pool of water. He accidentally fell into a nearby neon sign, and according to witnesses suffered several violent contractions and then fell to the roof. After falling, he became combative and flailing, but never became unconscious. Upon arrival at the trauma center, he was still combative and flailing, but was moving all extremities. Because of his combativeness, he was intubated shortly after his arrival.

Physical examination revealed normal vital signs with no evidence of neurologic deficit or cardiac arrhythmia. There was a 3 × 4-cm superficial burn on the anterior portion of his left thigh but no other abnormalities were noted on initial physical examination.

After a CT scan of his head was found to be normal, the patient was taken to the trauma intensive care unit, where he slowly became more responsive. He was extubated approximately two hours later, and upon questioning, he complained of left hip pain. Pelvic x-rays revealed a displaced fracture of the left femoral neck. After orthopedic surgical consultation, he had an open reduction internal fixation (ORIF) of his femur fracture. His postoperative course was uneventful and he was discharged home on postoperative day 2.

Discussion

Various series have shown the incidence of fractures associated with electrical injuries to range from 3.3% to 11.1%, with the greatest number of injuries involving the upper extremities. Numerous skeletal injuries have been reported to be associated with electrical injury, including vertebral body compression fractures,[1] fracture/dislocation of the shoulder,[2] osteonecrosis of the humeral head,[3] and bilateral femoral neck fractures.[4] Diagnosis of skeletal injuries is frequently delayed because attention is given to more urgent and obvious problems such as cardiac arrhythmias, or because the patient's altered neurologic status prevents an accurate history.

Long bone fractures due to electrical injury are thought to occur by one of two mechanisms. Fractures may result from the violent, tetanic contractions sometimes associated with an electrical injury, or from an associated fall.[5] Lower extremity fractures most frequently result from falls.

In the case presented here, the fall seems an unlikely cause of the femoral neck fracture for several reasons. The patient was a healthy young man who fell from a standing height, and the fall was not described by witnesses as particularly violent. Conceivably, the fracture could have occurred in the period directly after the fall, when the patient became combative and flailing, but again, given the patient's age, health status, and degree of combativeness, this seems an unlikely explanation. This leaves tetanic muscle contractions as the most likely cause of the femoral fracture.

The importance of a diligent search for skeletal injuries in victims of electrical injury cannot be overemphasized. Had the patient's neurologic status not improved so quickly, it is likely the diagnosis of his fracture would have been further delayed, exposing the patient to the many complications associated with undiagnosed fractures. ☐

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From the Department of Surgery, University of Tennessee College of Medicine, Knoxville.

Vanderbilt Morning Report

Subtle Presentation of Neurosyphilis

Case Report

A 64-year-old retired college history professor with a past medical history of hypertension and syncope diagnosed two months prior to admission presented himself to the hospital with fever and mental status changes. Two days earlier the patient became confused, and he complained of fatigue and malaise. His pupils were dilated, and his blood pressure was 180/100 mm Hg. He was taken to his sister's house for the night, and the next day felt better, but on the morning of admission he felt weak and confused, with difficulty walking and inability to dial a telephone for help. He was alone, but denied loss of consciousness. His sister found him lying on the floor, responsive but confused and unable to walk. He denied headache, photophobia, rash, recent tick bite, chemical ingestion, or illicit drug use.

Evaluation for syncope two months previously included a cardiac workup, which was negative, and an MRI of the head that revealed a questionable old CVA. When he refused further evaluation, phenytoin was prescribed for what was thought to be seizure disorder. Other medications included nifedipine for hypertension. He denied any drug allergies. He smokes a pipe, and denies any ethanol use.

In the emergency department, his temperature was 102.5°F, pulse 88/min, respirations 20/min, and blood pressure 145/92 mm Hg. He was oriented as to person, place, and time, but had occasional perseveration and intermittent confusion. His speech was clear. Heart sounds were regular, with a 2/6 systolic ejection murmur at the upper left sternal border. His cranial nerves were intact, and his motor and sensory examination was normal. Deep tendon reflexes were 2+ and symmetric, with normal plantar reflexes. He was able to name objects and think abstractly, but displayed occasional perseveration and difficulty completing sentences. He was unable to perform a finger-to-nose test appropriately.

Initial laboratory results revealed a WBC count of 17,300/cu mm with a differential of 76% neutrophils, 5% bands, 13% lymphocytes, hematocrit 41.7%, and platelets 271,000/cu mm. Radiograph of the chest, urinalysis, SMA-7, and SMA-12 were all within normal limits. Phenytoin level was 4.6 mg/L.

A non-contrasted CT of the head showed no mass lesions, hemorrhages, or infarcts. A lumbar puncture showed cerebral spinal fluid WBC count of 7 (PMN predominance), RBC count of 92, protein 88 mg/dl, and glucose 68 mg/dl. CSF gram stain, India ink, and AFB stains were negative. He was given IV ceftriaxone and doxycycline. MRI of the head demonstrated increased signal uptake in the left temporal lobe, and an EEG revealed epileptiform activity in the temporal lobe. Other pertinent laboratory studies included ESR 12 mm/hr, TSH 1.7 IU/ml, negative drug screen, negative HIV. Rapid plasma reagin (RPR) was positive with a titer of 1:4.

With a presumptive diagnosis of herpes encephalitis, he was treated with acyclovir for ten days, with a temperature decrease, though his mental status remained moderately impaired. Two weeks later, his CSF venereal disease research laboratory (VDRL) test was reported as positive (titer 1:4), compatible with the diagnosis of neurosyphilis. He improved with penicillin therapy

Discussion

With the increased use of crack cocaine, changing sexual practices, and the emergence of human immunodeficiency virus (HIV) infection, syphilis has reappeared as a major public health problem in the United States.[1] There was a dramatic decrease in incidence following the introduction of penicillin in the 1940s, but the rate has climbed in the past 15 years and is now believed to be approximately 15 cases per 100,000 population. Seven percent of patients with untreated primary syphilis will develop neurosyphilis.[2]

Neurosyphilis by definition refers to the second or third stage of disease, when chronic meningeal or parenchymal inflammation is present, rather than the common (approximately 40%) central nervous system invasion seen with early disease that often does not progress. Neurosyphilis is conventionally divided into asymptomatic and symptomatic phases. Asymptomatic neurosyphilis is defined as CSF abnormalities in patients without clinical signs or symptoms, the most common findings being elevated protein, hypoglycorrhachia, and positive VDRL. It is unknown what percentage of these patients will progress to symptomatic neurosyphilis in the modern antibiotic era, but it is clear that all patients with a history of primary syphilis should have a follow-up lumbar puncture regardless of symptoms.[3]

Symptomatic neurosyphilis occurring relatively early can be divided into two major categories, meningovascular and parenchymatous. Meningovascular disease involves cerebral arteries and arterioles, leading to ischemic damage and encephalopathy. It is manifested by confusion, seizures, and focal neurologic deficits, and usually occurs several months to two years after primary infection.[2]

Parenchymatous neurosyphilis occurs in two forms (which may overlap), general paresis and tabes dorsales. This characteristically occurs 10 to 20 years after primary infection. Symptoms of general paresis (syphilitic dementia) are protean, including personality changes, decreased intellect, dysphasia, and the Argyll-Robertson pupil (accommodates but does not react to light). Tabes dorsalis is the result of dorsal nerve root and ganglia involvement, and is manifested by lightening pains of the lower extremity, ataxia, impotence, peripheral neuropathy, and pupillary disturbances.[3]

The diagnosis of neurosyphilis is notoriously difficult, as it is still impossible to culture *Treponema pallidum* in vitro. However, a normal CSF examination rules out the diagnosis, as an inflammatory response is

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Presented by Samuel J. Ferris, M.D., medical resident, Vanderbilt University Medical Center, and Rufus C. Davis, M.D., chief medical resident, St. Thomas Hospital, Nashville.

always present. A VDRL test is always indicated; the test is essentially 100% specific, and thus a positive result is diagnostic.[4] Specific antibody tests, such as the fluorescent-treponemal-antibody absorption test (FTA-ABS), are also useful, but have a high false-positive rate.[1]

Fortunately *T. pallidum* remains highly sensitive to penicillin, and this is the drug of choice; most authors recommend at least two weeks of therapy. Response to therapy is judged by normalization of the CSF examination; if it remains normal for more than two years, relapse is rare.[2]

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Hypercalcemia in a Young Man

Case Report

A 29-year-old white man presented himself to the Vanderbilt University Medical Center Toxicology Clinic complaining of lethargy, nausea, and vomiting. He is employed at a thermal energy plant and was told by his occupational safety officer that he had been exposed to fly ash with elevated levels of lead and cadmium. He had been in good health until three months earlier, when he noted anorexia and constipation. During the three weeks before his clinic visit, he lost 20 lb of weight and developed intermittent nausea and vomiting, associated with dull periumbilical pain. He subsequently noted polyuria, polydipsia, decreased libido, and lack of energy.

Widening of the superior mediastinum had been found on a chest roentgenogram four years earlier, and a transbronchial biopsy was performed at that time at a community hospital. He remained asymptomatic, and was lost to follow-up. He lives in suburban Nashville. He takes no medications, and denies use of tobacco or illegal drugs. He has a family history of diabetes mellitus, coronary artery disease, and lung cancer.

On physical examination, his temperature was 98°F, pulse 92/min and regular, blood pressure 122/80 mm Hg, and respirations 20/min. Examination of the skin, head, and neck was normal. There was no lymphadenopathy. His lungs were clear to auscultation, and his heart sounds were regular in rate and rhythm, without murmur, rub, or gallop. The abdomen was soft and not distended, with very few bowel sounds and mild diffuse tenderness, especially in the left lower quadrant, and was otherwise negative. His stool was negative for occult blood. There was no edema, rash, or clubbing. He was alert and fully oriented, and his neurologic examination was negative.

His sodium was 140 mEq/L, potassium 4.4 mEq/L, BUN 29 mg/dl, creatinine 2.5 mg/dl, total protein 9.4 mg/dl, albumin 4.4 mg/dl, alkaline phosphatase 501 IU/L, calcium 14.9 mg/dl, phosphate 4.0 mg/dl. His CBC, glucose, SGOT, LDH, bilirubin, urinalysis, and thyrotropin stimulating hormone level were all normal. Electrocardiogram revealed normal sinus rhythm at 75/min with a QT interval of 0.34 seconds. Chest roentgenogram showed a widened mediastinum and mild hilar adenopathy. Abdominal plain films revealed enlargement of the liver and spleen, without calcifications.

On admission, intravenous normal saline and furosemide were administered to promote calcium diuresis. Urinalysis electrolytes revealed a fractional excretion of sodium of 1.37. Renal ultrasound showed no hydronephrosis or renal calculi. His creatinine clearance was 60 cc/min. Serum levels of lead and cadmium were normal. CT scan of the chest and abdomen showed diffuse paratracheal, subcarinal, cardiophrenic, para-aortic and aortocaval adenopathy, and hepatosplenomegaly. The parathormone level was 81 pm/L (normal 30-90) and intact-PTH was less than 7.5 pg/ml (normal 10-65). The 1,25-dihydroxy vitamin D level was 64 pg/ml (normal 13-50). Serum angiotensin-converting enzyme level was 146 U/L (normal 8-52). Review of the previous transbronchial biopsy revealed noncaseating granuloma with no demonstrable AFB, fungi, or tumor.

A diagnosis of sarcoidosis was made, for which oral prednisone, 40 mg daily, was administered. On hospital day four, his symptoms had markedly improved, and his serum calcium level had fallen to 11 mg/dl.

Discussion

Jonathan Hutchinson originally described sarcoidosis in 1877. It is a chronic multisystem inflammatory disorder of unknown etiology characterized by the formation of noncaseating epithelioid cell granulomas. The incidence in the United States has been estimated at 11 to 40 per 100,000 population. The incidence in the black population in the United States is about 14-fold that of whites. It occurs typically in the third and fourth decades of life. In non-black populations the male-female ratio is equal, but the incidence in black women is twice that of black men.[1]

The lesions in sarcoidosis are the result of a complex interaction between activated T_4 lymphocytes and tissue macrophages. T_4 cells migrate to the affected tissue sites because of local production of interleukin-1 (IL-1), thus depleting peripheral T_4 cells, which may account for the depressed delayed-type hypersensitivity seen in the disorder. IL-1 stimulates T-cell release of monocyte chemotactic factors as well as IL-2, a T-cell growth factor that amplifies the local inflammation. Macrophages form multinucleated giant cells and enhance fibroblast replication, ultimately leading to granuloma formation and fibrosis. T_4 cell release of B-cell growth factors is thought to be responsible for an increase in serum immunoglobulins. The etiologic trigger that initiates this immunologic mechanism is unknown.

Patients may be asymptomatic or present themselves with pulmonary symptoms (40% to 60%) or

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Presented by Francis J. Caprio, M.D., medical resident, and David Heusinkveld, M.D., chief medical resident, Vanderbilt University Medical Center, Nashville.

with other systemic manifestations (20%). The disease has classically been divided into four stages based on chest roentgenographic findings. Stage 0 is characterized by a normal chest x-ray (5% to 10%). Intrathoracic lymphadenopathy, typically bilateral hilar adenopathy without infiltrates, is seen in stage I (35% to 45%). Stage II is defined by the presence of both adenopathy and infiltrates (25%), while infiltrates without adenopathy is seen in stage III disease (25%). Almost every organ system may be affected, with clinical findings including dyspnea, cough, restrictive lung disease, uveitis, conjunctivitis, erythema nodosum, maculopapular cutaneous plaques, hepatosplenosplenomegaly, granulomatous infiltration of conduction systems and myocardium, mucosal involvement, cranial nerve deficits, and peripheral neuropathies.

Hypercalcemia occurs in 5% to 10% of cases, and is due to production of 1,25-dihydroxy vitamin D by the granulomas. Sun exposure may be a predisposing factor. Hypercalciuria can lead to nephrolithiasis, nephrocalcinosis, and renal dysfunction. Serum calcium levels usually respond quickly to corticosteroid therapy. Low-dose maintenance prednisone may be required to prevent relapse.

Diagnosis is confirmed by finding microscopically noncaseating granuloma in the appropriate clinical setting, along with exclusion of other granulomatous disorders. Differential diagnosis includes hypersensitivity pneumonitis, idiopathic pulmonary fibrosis, asbestosis, silicosis, berylliosis, connective tissue diseases, and AFB and fungal infections. Spontaneous remissions occur frequently, but corticosteroids are the first line of therapy when treatment is indicated. The disease should be followed with chest x-ray and pulmonary function tests, along with other objective tests relevant to the patient's presentation. Serum angiotensin-converting enzyme (SACE) activity is elevated in 60% of patients and is believed to correlate with total body granuloma load.[2] Elevated SACE level is not specific for sarcoidosis, and is insufficient for diagnosis. Studdy and Bird[3] have advocated serial SACE activity measurements as a safe, noninvasive method for monitoring the clinical course of sarcoidosis and response to therapy. Persistent hypercalcemia in the face of falling SACE levels suggests an alternative diagnosis such as hyperparathyroidism.

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Myocardial Bridging

Case Report

A 55-year-old white woman with recurrent chest pain presented herself to her local emergency department three days prior to admission with the acute onset of retrosternal chest pain, shortness of breath, and diaphoresis, and with evidence of anterior myocardial ischemia on surface electrocardiogram. She was admitted to the hospital, and seen by a cardiologist who treated her with topical nitrates and intravenous heparin. He subsequently "ruled out" myocardial infarction by sequential cardiac enzymes. Upon developing recurrent pain with associated cardiogram abnormalities indicative of anterior myocardial ischemia or infarction, she was transferred to Vanderbilt University Hospital for definitive therapy.

Further history upon arrival indicated the patient had suffered symptoms compatible with unstable angina of increasing duration and severity over the preceding three weeks. In addition, she reported occasional exertional angina during the preceding three years, having had cardiac catheterization twice without evidence of significant stenosis. Her past medical history was significant only for long-standing hypertension, an abdominal hysterectomy, and "thyroid cancer" diagnosed in the remote past. Medications included nifedipine (Procardia XL) 30 mg/day chronically, with the addition of topical nitrates, aspirin, and intravenous heparin since hospitalization. She gave a family history of hypertension and coronary artery disease. She patient did not smoke or partake of alcohol. She was unaware of her serum lipid levels.

Physical examination revealed a thin white woman in mildly acute distress, afebrile, with blood pressure 144/85 mm Hg, pulse regular at 88/min, and respirations 20/min and unlabored. Further examination demonstrated normal jugular venous pressure and clear lungs. She had a normal point of maximal impulse and regular rhythm on cardiac examination, with an S_4 gallop but no discernible murmur.

Arteriography in the cardiac catheterization laboratory revealed mild disease in the proximal left anterior descending artery, and a 3-cm segment of the anterior descending artery in which both flow and diameter varied considerably between systole and diastole. This segment, calculated to have a diameter of 1.3 mm during diastole, diminishing to only 0.3 mm during systole (23%), was thought to represent a myocardial bridge (Fig. 1). The arterial supply elsewhere was not significantly diminished. The left ventricular ejection fraction was greater than 80%, with marked concentric left ventricular hypertrophy.

She was admitted to the coronary care unit, where her anti-anginal medication regimen was maximized with calcium-channel antagonists and beta-adrenergic blockers given the findings. Functional cardiac testing the following day failed to reveal any evidence of myocardial necrosis or inducible myocardial ischemia.

Presented by Gregory Martin, M.D., medical resident, and David Heusinkveld, M.D., chief medical resident, Vanderbilt University Medical Center, Nashville.

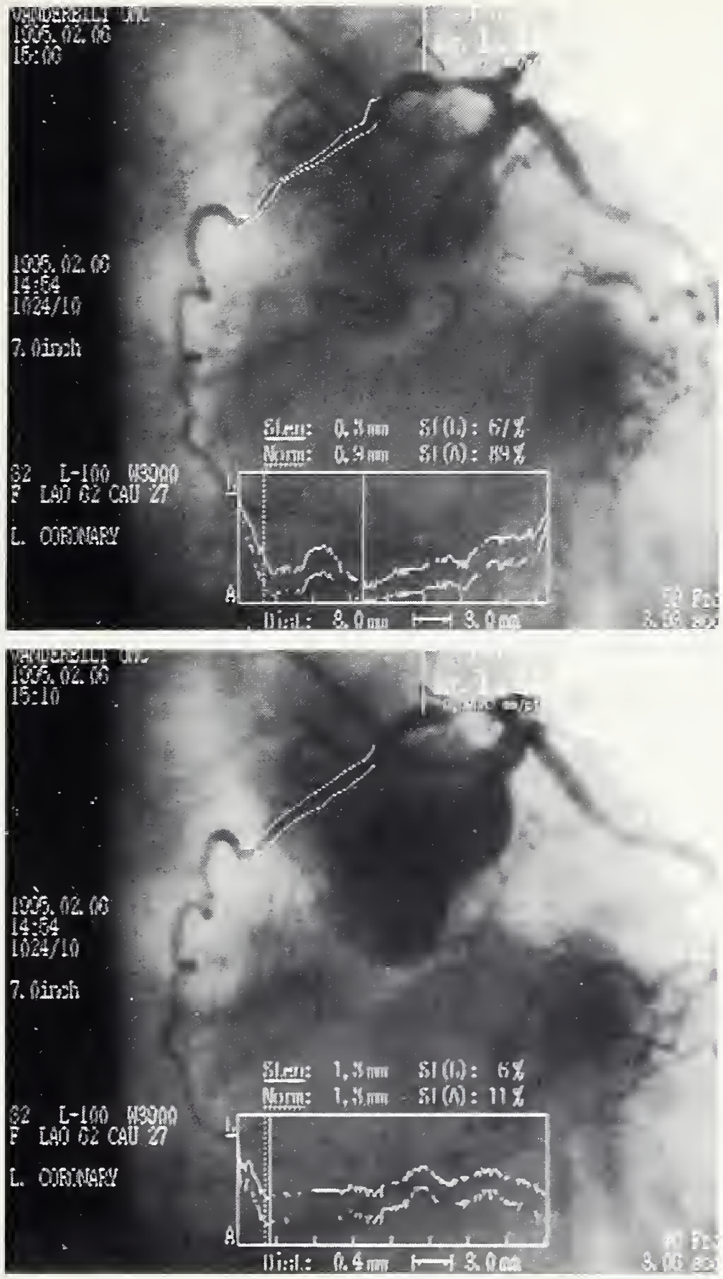

Figure 1. *(Top)* Cardiac systole with LAD compressed to 0.3 mm. *(Bottom)* Cardiac diastole with LAD patent at 1.3 mm.

Discussion

Myocardial bridging is a not uncommon phenomenon that is found in up to 35% of certain populations studied at autopsy but is thought to occur in 5% to 12% of the U.S. population.[1,2] The demographics represent men and women equally, and have no specific age predilection. Its responsibility for myocardial ischemia or infarction is much less frequent, estimated to be less than 1%.[3] Angina pectoris described with myocardial bridging typically does not follow chronic stable angina patterns, but more often is manifested as unstable or atypical angina.[4] It occurs most commonly in the left anterior descending coronary artery, but has been described in all large epicardial coronary arteries. Anatomically, myocardial bridges have several common characteristics, including an average length of 22.5 mm with a myocardial thickness of 2.8 mm.[5] Significant ischemia has been demonstrated to result when the intramyocardial segment is long, when the compression (or "milking") results in a systolic diameter of less than 25% of that found in diastole, and most often in the presence of left ventricular hypertrophy.[6] The mechanism of ischemia has been difficult to determine and demonstrate, given that myocardial perfusion occurs primarily during diastole. It appears, however, that increased myocardial oxygen demands induced by ventricular hypertrophy may contribute, as may tachycardia, altered vascular tone, and coronary spasm in the intramyocardial segment.

Further studies have shown that as a rule the intramyocardial segment remains thin and without atheromatous deposits.[7] In fact, some studies have found a statistically significant increase in atherosclerosis proximal to the myocardial bridge while the intramyocardial segment and distal segments typically remain free of disease. In addition, there is an overall lower incidence of atherosclerosis in hearts with myocardial bridging, and one study demonstrated a tendency for fewer anterior wall infarctions in the patient group with a coronary muscle bridge overlying the left anterior descending artery.[5] This "protective effect" of myocardial bridging is unclear as to etiology; yet episodes of sudden death have been attributed to myocardial bridging as the only finding at autopsy, particularly in otherwise young healthy men dying suddenly during exercise.[8,9]

Myocardial bridging has a distinctive appearance on cineangiography, though it must be reviewed critically to avoid confusion with simple coronary arterial stenosis. The vessel appears normal in architecture and diameter during diastole, but compresses easily and consistently during systole. Angina pectoris determined to be related to myocardial bridging can frequently be treated medically by beta-adrenergic blockade or with calcium-channel antagonists. Refractory cases are subject to more aggressive surgical therapy, including traditional coronary artery bypass grafting or "unroofing" techniques involving surgical division of the overlying myocardium. There is limited experience with both, but results appear good.[10,11] ❑

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Questionable Appropriateness of/Consent for Procedure

J. KELLEY AVERY, M.D.

Case Report

A 42-year-old employed woman who has had previous surgery for coronary artery disease (CABG-6), a herniated nucleus pulposus (HNP) at L5, S1, and who has been treated for chronic depression, went to her primary care physician (PCP) after having stumbled over a cart at work. This resulted in pain in her low back for about 24 hours. Having previously had surgery for HNP, she was examined carefully and found to have marked paravertebral muscle spasm in the lumbar area with inability to straighten her back, and walked with about 20 degrees flexion at the lumbar level. She exhibited good motor strength, no loss of sensation to pin prick, and positive SLR of the left at about 40 degrees. Because of the possibility of a recurrent herniated disc she was admitted to the hospital for pain relief and appropriate evaluation and management.

She was treated conservatively, and the neurologist consulted on the fourth hospital day suggested that observation and physical therapy be continued unless the symptoms increased. On the fifth hospital day, still with some pain, the patient was seen in consultation by an orthopedic surgeon. A CT scan of the spine showed only some minimal bulging at the L4-5 level, and continued conservative treatment was suggested. While in the hospital under physical therapy she regained a full range of motion in the lumbar spine and was able to walk without difficulty. She was discharged home on the eighth hospital day. About a week later she again saw the surgeon for continuing back pain, with some paresthesia along the posterior aspect of the right leg. Further study with a myelogram was suggested, as the need for repeat HNP surgery was thought possible at this time. Two weeks later a CT scan of the lumbar spine done with contrast was reported to show minimal central bulging at L5, with no pressure on the thecal sac. The L4 disc was normal. Her PCP began treatment with an NSAID, and noted some improvement over the next two weeks. During this time she had an acute anxiety episode and her PCP began treatment with Prozac.

The patient continued to complain of back and leg pain but improved on conservative management. She was encouraged to continue her exercise program, which was not described in the record, but compliance with the exercise program was thought not to be good.

After about nine months, she was again admitted to her consultant's hospital in a major city. MRI was done but did not add to the picture, and epidural block was suggested. Initially, she did not go through with this, but on a subsequent visit about two weeks later a caudal and lumbar epidural block was done with Marcaine and steroids for possible post-laminectomy scaring. Immediately following the block, the patient began to have difficulty emptying and controlling her bladder. Numerous studies of bladder function were done, and further consultation by a neurosurgeon was obtained. Two and one half years after her initial fall, the prevailing diagnosis was cauda equina syndrome secondary to the epidural block.

A lawsuit was filed alleging negligence on the part of the anesthesiologist in performing the block, and lack of informed consent to do the procedure. It was alleged that the block had rendered her unable to control her bladder, and occasionally bowel continence as well. She lost sexual capacity and was divorced after 20 years of marriage. No experts were found that would support the use of the epidural block in this case, and there were qualified experts who criticized the procedure both as to appropriateness and technique. A six-figure settlement was thought to be the best way to close this claim, as the chance of trial was thought to be too risky.

Loss Prevention Comments

Epidural injection is not totally innocuous! The possibility of injury to the cord, infection, and bleeding into the canal all are possibilities. It is true that these complications are rare, but they do occur. One would expect that the anesthesiologist did discuss with this patient some of the risks of this procedure, but there was no documentation substantiating that he did. The record did state that after the patient refused to allow the block the first time it was recommended, she remembered little of the prior discussion. Without a record of the discussion, and with the patient denying that she understood the procedure, the contest was decided in the patient's favor, as it almost always is in such cases.

The "conservative treatment" was mentioned many times in the record, but there was no clear description of the treatment or the patient's compliance with the program.

The block was done purely on subjective findings. All of the tests for disc rupture were negative, or equivocal at best. Low back pain is not an easy condition to treat even though it is one of the most common patient complaints. The treatment is noninvasive unless there is objective evidence of organic disease. As systematic studies of the condition of low back pain continue, it becomes more and more evident that any invasive treatment is rarely indicated.

This patient had been treated for chronic depression in the past and had been given Prozac for an anxiety attack she had only a short time before the block was done. With this history and no objective findings indicating disc disease, a psychiatric evaluation was in order before other modalities were chosen.

On reading this record, one gets the impression that much of the pertinent information is not available. Documentation is always important, but with a patient of this kind with this kind of complaint, more than ordinary care must be taken with the record. Had that been done, the probabilities are that this lawsuit would not have been filed or that the legal outcome would have been more favorable for our physician. ❑

Dr. Avery is chairman of the Loss Prevention Committee, State Volunteer Mutual Insurance Company, Brentwood.

The Case of the Month is taken from actual Tennessee closed claims. An attempt is made to fictionalize the material in order to make it less easy to identify. If you recognize your own case, please be assured that it is presented solely for the purpose of emphasizing the issues presented.

Department of Health Report

Fifty Years of Fluoridation

DURWARD R. COLLIER, D.D.S., M.P.H

On Jan. 25, 1945 at 4 PM, one of the most successful public health projects in history began. Grand Rapids, Michigan, became the first city in the world to fluoridate its drinking water, setting the stage for a dramatic national decline in the rate of dental cavities. As water fluoridation celebrates its 50th anniversary this year, fluoride continues to be dental science's main weapon in the battle against tooth decay.

Fluoridation of the Grand Rapids water supply launched a 15-year study sponsored by the Public Health Service, the University of Michigan, and the city of Grand Rapids to monitor the rate of tooth decay among the city's 30,000 schoolchildren. After just 11 years, scientists announced that the rate of dental cavities had dropped more than 60%. For the first time in history, tooth decay—the inevitable cause of pain and suffering for generations of youngsters—was proven to be largely preventable.

Fluoridation began in Tennessee with the city of Milan in West Tennessee fluoridating its water supply in 1951. Milan was the second community in the Southeast to fluoridate. Communities from across Tennessee have since fluoridated their water systems and today 95% of all Tennesseans drinking water from a public water system drink fluoridated water.

A statewide study in 1988 indicated that over 50% of school-aged children in this state now are caries free. Dental caries have been reduced overall by 75% since the first community fluoridated. Tennessee has had many "firsts" in the area of fluoridation in that it was the first to offer financial assistance to communities to initiate this public health measure. It was the first to have approved public water supply signs on the major highways going into the communities to also indicate it was fluoridated. In conjunction with the Division of Oral Health of the Centers for Disease Control and Prevention, a national training school for fluoridation personnel was begun in the mid-70s at the Water Plant Operators Training School in Murfreesboro. Today, this school trains fluoridation personnel from all over the United States, as well as many countries throughout the world.

Presently, over 144 million Americans in approximately 10,500 communities drink fluoridated water. It is one of the best public health bargains. Water fluoridation costs an average of only 51 cents per person per year—the price of a candy bar. Over a lifetime, the $38.25 expenditure for fluoride is less than the average cost of just one dental filling, about $42. Exactly how fluoride prevents cavities is not fully understood, but scientists do know that fluoridated water most benefits those who drink it from birth, and the protection holds throughout life for persons who continue to live in fluoridated communities. For the 26 million Americans who live in areas without central water systems, there are a variety of ways to receive fluoride, including fluoridated toothpastes, gels, mouthrinses, and other products. Although beneficial, fluoride from these sources is not as effective as water fluoridation in preventing tooth decay. Studies show that even today, children who have always lived in a fluoridated community have up to 25% less decay than youngsters who have never lived in a fluoridated area.

As the 50th anniversary of fluoridation is celebrated this year, Tennessee can be proud of its leadership role among states regarding this important public health measure. We can also point with pride to the benefits of less pain and suffering from oral disease that have been afforded its citizens through the progressive implementation of water fluoridation. ❑

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From the Tennessee Department of Health, Nashville. Dr. Collier is director of Oral Health Services, Bureau of Health Services Administration.

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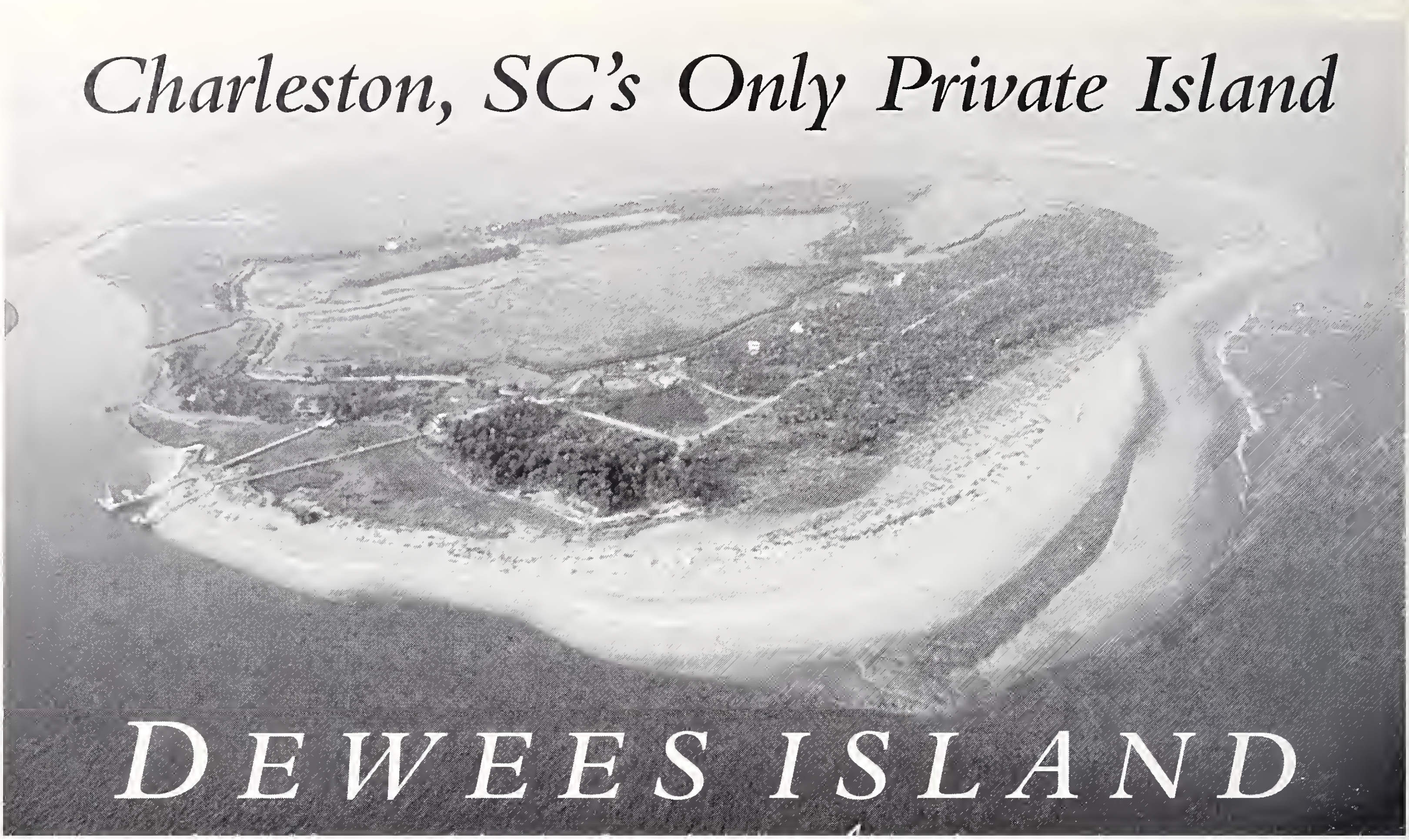

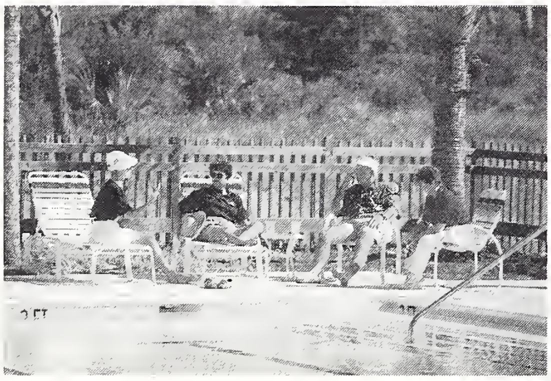

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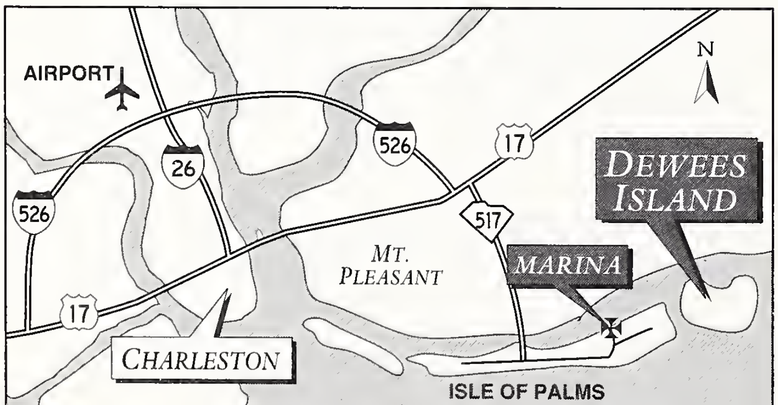

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ROBERT E. BOWERS

THE TMA: Meeting Your Needs

As I visit and speak with physicians individually, and at local medical societies around the state, perhaps the question I hear asked most often is, "What has the TMA done for me lately?"

I will not attempt in this small space to answer that question, but I would like to chat with you about a project that will affect the Tennessee Medical Association and its membership.

Your Board of Directors, the TMA officers, and the executive staff have committed themselves to the re-evaluation of the services that your Association offers you. Specifically, we feel that because of the significant changes in health care delivery and its effect on the practice of medicine, even within your own particular hospital and your own medical community, that it is time that the TMA re-evaluate its priorities, programs, and organizational structure and how they relate to its members' needs.

Our purpose is to make the TMA as responsive as possible to the members' needs in today's health care climate. A necessary function of that response effort is the development by the TMA of a comprehensive strategic plan of action that will keep our organization moving forward.

To give you a brief overview, the strategic plan will (1) address today's business environment and its effect on our members, (2) establish achievable goals and tactics that are member-driven, and (3) establish a method for continued planning and improvement. Benefits to TMA members will include an advocacy program, member services (growth of those already provided and development of new services), and availability of medical education and continuing medical education, to name just a few.

Ideally, we want to see the Association more responsive to the needs of its members. However, not all members have the same needs. And within certain resource constraints, we would like to fulfill as many of these needs as possible.

There is an immense amount of time, energy, and some expense being spent on planning the future of this organization. Physicians generally enjoy being the vanguard of innovative thinking, and our 6,700 members deserve nothing less from this organization.

The TMA membership will certainly be involved in helping us to rethink our mission and our goals and the part that we play in being an advocacy for physicians and patients. The TMA will also keep its membership apprised of any changes in function or structure as they occur.

You are aware that there are many other organizations attempting to usurp the role of the TMA. With the advent of hospital/physician organizations and large physician group practices, there may be a tendency to feel more secure in these environments and not feel the need for an organization to represent Tennessee physicians as a whole. There may also be a tendency for large specialty organizations to believe that they are fully representing the physicians' needs. All of these organizations have a role to play. Nevertheless, I believe that no one represents the overall interests of the Tennessee physicians and their perspectives as well as our own organization, the Tennessee Medical Association.

It is a time in our organization's history when the nature of our physicians' practices are drastically changing. Our central goal at the TMA is to represent our physicians and address their differing needs. With clear-cut initiatives and forward-thinking strategies, and most of all, *your* participation, these goals are attainable—and every member benefits.

Stay tuned.

Robert E Bowers

journal of the
tennessee
medical association

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AUGUST, 1995

editorials

. . . For Evil To Prevail . . .

"All that is necessary for evil to prevail is that good men do nothing" is a generally accepted truism that looks on its surface like pure wisdom. Unfortunately, whether it is or is not depends entirely on definitions, on which differences of opinion may provoke not only disagreement, but downright anger and strife, and even war. It puts me in mind of the play on the oft expressed demand, "Don't just stand there! Do something!" that goes, "Don't just do something! Stand there."

For instance. Mr. Neville Chamberlain was a good man. He was well enough thought of that the English Parliament elected him their Prime Minister. Watching Hitler on the verge of gobbling up Europe, the good Mr. Chamberlain did something. He went to Munich with a deal that Der Führer couldn't refuse. Its signing, beamed Mr. Chamberlain on his victorious return to London, guaranteed "Peace in our time." Mr. Winston Churchill became the "black hat," being branded a war monger for denouncing Mr. Chamberlain's capitulation (what Mr. Chamberlain referred to as "compromise"). As we know now, what Mr. Chamberlain did turned out to be not so good. What he actually did was guarantee Herr Hitler some much needed time to get his coup in gear. As the saying goes—or used to go in those days and likely no longer does—Mr. Chamberlain shoulda stood in bed that day.

Writers these days, predominantly but not exclusively media types, apparently get a bang out of the anger they see all about them. One of them tempered his comments by opining that it is more apathy (Don't just do something; stand there?) than anger, and that's worse, he said (Don't just stand there; do something—even if it's wrong?). They all seem to think that's something new. That shows both how unlearned and how young they are. How do they think the United States came into being? There was a fair lack of unanimity among the colonists and their leaders at the time on the proper course to follow to mitigate their rage against King George. Like the draft card burners of a couple of centuries later, some of them wound up in Canada, founding, among other things, Toronto.

Yesterday the Southern League had a rally in Nashville's Centennial Park. When I was going to school, first in Chattanooga and later at Vanderbilt in Nashville, the Southern League was a group of baseball teams that included the Nashville Vols (you did read it right: *Nashville Vols*) and the Chattanooga Lookouts. Except they were the Southern *Association*. It was just that everybody called it *league*, possibly *heimweh* for the bigtime. Anyhow, this current Southern League is apparently trying to reinvent the Confederacy, with some major differences, the most major perhaps being that they are not states but individuals, and at last count only about 850 of them. The organization is not, its leaders allow, racist, and, unlike the militias (this according to the newspapers) is made up of intellectuals. I will let you judge whether or not they are intellectuals after I have told you that having been accused of being secessionists, they allowed that they are basically for states-rights, and that secession would be considered only as the last resort.

Secession? With *850 people*? Don't laugh. Fritz Ingram gave up his citizenship and became a citizen of Ireland, which you might say is a form of secession. So did financier Sir John Templeton, who lives in the Bahamas, and has, as you might have gathered, been knighted. Of course, they each had a few hundred million dollars lying around that they tied up in blind faith trusts in tax havens and so on, so that they are legally paupers. Sure enough secession, though, is a little tougher to pull off. Massachusetts was the first to try it, but all that was necessary to take the wind out of their sails was a threat by President Andrew Jackson, the hero of the Battle of New Orleans, to march an army up there and settle their hash. The Southern Confederacy was less fortunate because the Confederates were more obdurate. Notwithstanding that every male member of my family on both my father's and my mother's side who was able to bear arms, as well as one female member, was in the Confederate Army, and that I myself remain unreconstructed, it was to my mind a costly and foolish, even if noble, gesture. It is also one that has been played out in countless venues worldwide since the human race began, and almost uniformly with no better results. All it does is keep down the population, and keep most of the survivors in desperate straights. Witness Bosnia-Herzogovinia. We are not talking here about survival. We are talking about turf and perks.

There might indeed be some market these days for secession. In fact, I have on occasion been of a mind to try it out for myself. But that has been at tax time, and not much else. At the same time, there is widespread disaffection directed toward minorities of various sorts, by no means all of them racial, because of inequities imposed on the majority in their name. There is also a deeply held disavowal of any guilt over acts perpetrated by earlier generations, long before the ancestors of many of them arrived, often penniless, on these shores. I doubt, though, that many of those disaffected have secession in mind. It is more that they are rebellious, some of them temperate and some not. Though some of its leaders seem not to have gotten the message, the new Congress is well aware that the broad disaffection for government got them elected.

The United States generously allows its expatriates 120 days a year in their former country. I'll have to say that for me that would be a mighty meager allowance. I've spent some time in the Bahamas, and while it is a lovely place, and could doubtless be made even lovelier with a few hundred mil, it is my idea of no place to live. I suspect that the Southern League might have some difficulty drumming up support for secession, at least from among their choice of clientele, and maybe even from any clientele at all in the numbers they would need. I have a fairly wide acquaintance that crosses most of what is loosely referred to as socioeconomic strata, and I'd almost be willing to guarantee a lack of any such widespread support.

And what of the activity or lack of it by good men that we started out discussing? Well, a contingent of folks, for the sake of argument "good" ones, not content to do nothing showed up in Centennial Park yesterday. Whether they did any more than stimulate the reportage that for better or worse stimulated this piece I have no way of knowing. Perhaps the wise warning voiced by one of their leaders to a rash younger member that to speak too much about secession, along with collusion with the military, might be interpreted as sedition, as in fact by definition it is, will keep some other rash youngsters from spending a few years in jail. I think they all likely had better things to do that day. But what do I know?

Perhaps they think the same about me, if they think about me and my musings at all, which is unlikely. We may, as I said at the beginning, both, either, or neither be right, depending upon whom you ask. After all, what do any of us know for sure?

J.B.T.

V-J Day Remembered

This is a sequel, sort of, to an editorial I wrote last month, the last part of a serialized version of the final days of the Second World War. For those of us who were around then and not experiencing it firsthand, the whole war was actually a serialized story, with daily, sometimes even hourly, episodes. For those who were where the action was, it was more a continuum, one that mostly they could have done without. It all came to a screeching halt on August 14, 1945.

Though in one way or another I was involved with the war as a member of the military for more than six years, I had no firsthand experience with the war itself, having never fired a round in anger or had one fired at me. I also never had any experience with the Pacific theater, all of my overseas experience having been in Europe, with a brief temporary duty assignment in North Africa. My affinity for V-J Day lies in its having allowed me to escape any firsthand knowledge of the fighting in the Pacific, which at the time I entered active duty in July of 1945 almost certainly lay in my immediate future. I went instead to Europe, and spent most of my time there in France as a member of the Army of Occupation. I therefore was, and am, just as sincere in honoring the event, which I celebrated at Camp Lee, Virginia, as anybody else wherever they might have been. That was 50 years ago this month.

Whether or not that seems like a long time ago depends. On the one hand, when I consider all that has happened to me and my world since then, it seems as if an eternity has slipped away. But then, on the other hand, when I begin recollecting specific episodes in the serial, they somehow seem to have happened only yesterday.

I'm sure one never becomes accustomed to having friends and acquaintances disappear from before one's very eyes, as happens during combat, even though during one's medical training one is constantly confronting death. Such deaths do not have the immediacy or the personal implications of battle casualties. V-J Day put an end to all such immediacy and personal implications. It meant that the wartime generation could breathe easier for a while. After a few decades death begins inevitably to strike all around one again, and as it gains momentum with time, the same aura of immediacy develops as before, and one is forced again to contemplate his own mortality. Thus, it seems the only thing that has changed is the context.

Something over 2,500 medical officers, mostly First Lieutenants, MC, AUS, entered on active duty in July, 1945, having just completed a nine-months internship, or perhaps, for a few, a year or two of additional residency training. We were all scheduled for the Army Medical Field Service School (AMFSS) at Carlisle Barracks, Pennsylvania, but since the school could handle only 1,200 officers at a time, the second half of the alphabet was assigned to various other installations for the first two months. I wound up at Camp Lee, in Petersburg, Virginia, which had a regional hospital, the Army Quartermaster School, and also, after V-E Day, a center for processing returnees from the ETO for reassignment to the Pacific. During my time there I worked variously on the EENT service in the hospital, in a dispensary in the QM School, and on the profile line for returnees, scarcely a thrilling experience. There was a certain advantage, though, in finding out what the real army was like before going to the AMFSS.

On the day the Enola Gay dropped the Big One on Hiroshima I was working in the dispensary. It passed as any other, with mild speculation among the new draftees in the QM School that The Bomb might help them escape the real war. Incidentally, the draft boards were by that time scraping the bottom of the barrel, and you could tell it. One man arrived for duty with severe bronchopneumonia. He had severe bronchiectasis, for which he had been classified 4F. His board had drafted him anyway—for the *seventh* time—to help fill their quota. We sent him to the hospital, where he was treated, released, and given his seventh, and this time his last, medical discharge.

It is my recollection that The Bomb was dropped on Nagasaki on August 7. Rumors immediately began circulating that this one had gotten the attention of Emperor Hirohito, and that Japan was about to surrender. On the 13th of August word was being passed around that anyone wishing to buy hard stuff for the projected celebration ("hard stuff" in *that* war was distilled spirits) had better be about it, as the ABC (alcoholic beverage control) stores in Petersburg would close as soon as Japan's capitulation was announced. Actually, long before that time, August 14, the ABC stores' shelves had already been stripped clean.

What V-J Day did among other things was to place a severe strain on the moral fiber of what few tee-totalers remained. The chapels were busy places that day, but after the owners of still intact moral fiber paid brief visits to offer homage and gratitude to their God, quite a few of those fibers, already worn thin, broke. Though many, maybe even most, of the penitent back-slidden celebrants subsequently repaired their fiber, by nightfall there were a lot of tipsy tippling ex-tee-totalers tottering about the premises. Unless they were enduring unaccustomed hangovers, most doubtless believed their lapse justified. The Commanding General of the QM School, not known as a tee-totaler, was seen crawling around underneath a poolside table at the officers' club looking for a cigarette he had dropped. Gen. Horkan, CG of the post, remained with his wife in his quarters, foregoing, I suppose in honor of the day, his usual rides about the station picking off non-saluters of the general's flag on his staff car.

As I recall, the announcement came about mid-morning, and as the junior of three officers in the dispensary I was left to finish off sick-call. Most of the would-be patients recovered miraculously and left, and I spent less than an another hour there in a remarkably foreshortened session. The profile line was immediately converted into a separation center, and life went on. But not as before. Life was never the same again. All of those hapless men without any future that they could look forward to had suddenly been granted a future that they could look forward to. Ungrammatically: *Me, too.* PTL!

But then along came the Cold War, the "Police Action" in Korea, and Vietnam, and not life, but *death*, was the same again. Though all those passed away too, and we have been granted a measure of peace for a time, the killing fields remain a part of the human existence. What came to a screeching halt on V-J Day was not war. It was only *the* war—*our* war. What goes around still comes around.

J.B.T.

mail box

True Love and Auscultations of the Lungs

To the Editor:

While driving across the Tennessee river to the hospital, it was impossible for me not to notice them. Most mornings the bag lady and her companion could be seen ambling over the bridge. She had shabby clothes and a protuberant belly, and she carried a large blue mesh bag in one hand. The other hand firmly engulfed his hand. She wasn't leading him like a child, since they walked side by side, but she always had her hand on top of his. Hand-in-hand, they crossed the bridge in the heat of summer, in the rain, and in the snow. Their clothes never seemed to change; only coats were added for inclement weather. While their names and destination were never known, for those who watched this recurring morning scene, it was an inspiring glimpse of true love.

One afternoon, I received a consultation-request regarding a patient who had had unremitting fever for one week after cholecystectomy. The nurse informed me that the patient's wife had asked for me. "Didn't the surgeon render the consultation?" I asked. "Not really," came the reply. "She demanded an infection doctor for her husband."

As I entered the room I saw the bag-lady holding the patient's hand. "He's dying doc." she said. "You've got to save him." A note on the chart indicated that the surgeon might explore the abdomen unless an alternative plan was offered.

The patient appeared very ill. He had poor color, tachypnea, warm skin, and a rapid pulse. The heart was of normal size and was free of murmurs and gallops. The abdomen was slightly distended and tender, and bowel sounds were faint. The legs were free of edema and tenderness. When he was in the upright sitting position, only a few inspiratory crackles were found at both bases of the lungs. When he was in both right and left lateral decubitus positions, auscultations over the dependent portion of the lungs revealed numerous inspiratory crackles over the left dependent lung, which suggested pneumonia[1] and/or atelectasis. An arterial Po_2 of 56 mm Hg, a WBC count of 15,200/cu mm, and a normal lung-scan supported these diagnostic possibilities, despite normal portable radiographs of the chest. The illness resolved after treatment with intravenous doxycycline, bronchodilators, and intermittent positive pressure breathing.

In this patient, inspiratory crackles had been intensified[2] and/or induced[1,3] by the lateral decubitus positions, which results in partial deflation of dependent lungs.[4] Early or mild pneumonia has been detected using this simple maneuver.[1]

Several weeks later, they were on the bridge in the morning light. Their shuffle was slow, but they were moving. She gripped his hand. Once again, true love was on parade.

Verne E. Gilbert, M.D.
211 Blount Ave SE
Knoxville, TN 37920

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ꕥ in memoriam ꕥ

James Nicholas Proffitt, age 78. died May 17, 1995. Graduate of Vanderbilt University School of Medicine. Member of Blount County Medical Society.

new members

The *Journal* takes this opportunity to welcome these new members to the Tennesssee Medical Association.

LAWRENCE COUNTY MEDICAL SOCIETY
Llewellyn Holloway Hamilton, M.D., Lawrenceburg

MEMPHIS-SHELBY COUNTY MEDICAL SOCIETY
Claro Faustino Diaz, M.D., Memphis
Scott Furm Mofford Duncan, M.D., Memphis
G. Aric Giddens, M.D., Memphis
John Douglas Gould, M.D., Memphis
Queen Ann Marsh, M.D., Memphis
Evan W. Murray, M.D., Memphis
Bennett Lewis Rudorfer, M.D., Memphis
Robert James Smith, M.D., Memphis
James J. Stamper, M.D., Memphis
Marc Hadley Stegman, M.D., Memphis
Donald James Sullivan, M.D., Germantown
Jerome W. Thompson, M.D., Memphis

NASHVILLE ACADEMY OF MEDICINE
Steven Ronald Abram, M.D., Nashville
David Wayne Allen, M.D., Nashville
Carl C. Awn, M.D., Nashville
Stephanie B.C. Bailey, M.D., Nashville
Benjamin F. Booker III, M.D., Nashville
Robert Marshall Dimick, M.D., Nashville
Leslie Diane Douglas-Churchwell, M.D., Nashville
Jon Winston Draud, M.D., Nashville
John Elliott Fanning, M.D., Nashville
Jenny J. Franke, M.D., Nashville
Anita Shaunak Henderson, M.D., Goodlettsville
Roger C. Joy, M.D., Nashville

Douglas F. Milam, M.D., Nashville
Thomas R. Mitchell, M.D., Nashville
Roy Quincey Sanders, M.D., Nashville
Gary I. Smith, M.D., Nashville
Christopher James Stanley, M.D., Madison

PUTNAM COUNTY MEDICAL SOCIETY
Danny Jay Strange, M.D., Cookeville

SEVIER COUNTY MEDICAL SOCIETY
Wade Hampton Penny III, M.D., Sevierville

SULLIVAN COUNTY MEDICAL SOCIETY
Carol Ann Dewey, M.D., Bristol

WASHINGTON-UNICOI-JOHNSON COUNTY MEDICAL ASSOCIATION
William Stuart Dallas, M.D., Johnson City

personal news

Nicholas B. Appleton, M.D., Milan, met established requirements for membership in the International Who's Who of Professionals organization.

Richard C. Cole, M.D., Dechard, has been elected a Fellow of the American Academy of Family Physicians.

Tommy E. Collins Jr., M.D., Alcoa, has been elected a Fellow of the American Academy of Pediatrics.

Gary Keith Lovelady, M.D., Tullahoma, has been awarded board certification in pulmonary disease by the American Board of Internal Medicine.

Ronald E. Overfield, M.D., Nashville, was presented the Tennessee Radiological Society's 1995 Outstanding Service Award.

announcements

CALENDAR OF MEETINGS

NATIONAL

Sept. 14-16	American Academy of Facial and Reconstructive Surgery—Sheraton, New Orleans
Sept. 14-17	Western Occupational and Environmental Medical Association—Doubletree Fisherman' Wharf, Monterey, Cal.
Sept. 16-22	American Society of Clinical Pathologists—Hilton, New Orleans
Sept. 17-20	American Academy of Otolaryngology–Head and Neck Surgery—Sheraton and Marriott, New Orleans
Sept. 21-23	American College of Clinical Pharmacology—Holiday Inn Crowne Plaza, Rockville, Md.
Sept. 21-24	American Academy of Family Physicians—Marriott and Hilton, Anaheim, Cal.
Sept. 27-30	American Academy of Cerebral Palsy and Developmental Medicine—Marriott, Philadelphia
Sept. 28-30	Central Society for Clinical Research—Drake, Chicago
Oct. 7-10	Association for the Behavioral Sciences and Medical Education—Naples, Fla.
Oct. 7-12	American Society for Reproductive Medicine—Convention and Trade Center, Seattle
Oct. 8-11	American Society for Therapeutic Radiology and Oncology—Fontainebleau, Miami Beach
Oct. 8-11	Medical Group Management Association—Convention Center, New Orleans
Oct. 12-14	Association of American Physicians and Surgeons—Marriott, Falls Church, Va.
Oct. 12-15	Society for Health and Human Values—Red Lion, San Diego
Oct. 13-18	American College of Gastroenterology—Hilton, New York

TMA Members Receive AMA Physician's Recognition Award

The following TMA members qualified for the AMA Physician's Recognition Award during May 1995. This list, supplied by the AMA, does not include members who reside in other states.

Physicians can receive the PRA certificate valid for one, two, or three years. For the one-year award, physicians report 50 hours of continuing medical education, including 20 hours of Category 1; for the two-year award, physicians report 100 hours of CME, including 40 hours of Category 1; for the three-year award, physicians report 150 hours of CME, 60 of which are Category 1. Each application for the PRA must also verify participation in Category 2 CME activities.

Royce T. Adkins, M.D., Nashville
William P. Buckley, M.D., Memphis
Terry P. Cruthirds, M.D., Martin
Ben W. Davis, M.D., Nashville
Robert W. Dunavant, M.D., Bolivar
Meredith A. Ezell, M.D., Hermitage
Steven G. Flatt, M.D., Cookeville
Michael H. Gold, M.D., Nashville
Erich B. Groos Jr., M.D., Nashville
Theodore F. Haase Jr., M.D., Knoxville
Kenneth L. Hill, M.D., White Pine
Randall L. Holcomb, M.D., Memphis
Tom N. Humphrey, M.D., Selmer
David H. Knott, M.D., Memphis
Leonard J. Koenig, M.D., Nashville
Van S. Mask, M.D., Oak Ridge
Edward C. McDonald, M.D., Nashville
Merrill D. Moore Jr., M.D., Knoxville
Waclawa Y. Pawlowski, M.D., Lebanon
Daniel P. Robertson, M.D., Kingsport
John A. Shields, M.D., Nashville
Thomas F. Shultz, M.D., Nashville
Frederick D. Slaughter, M.D., Bristol
Lee Stein, M.D., Memphis
Robert C. Taylor, M.D., Signal Mountain
Anthony E. D. Trabue, M.D., Nashville
Arthur W. Walker, M.D., Waverly
John J. Warner, M.D., Nashville
John R. Werther, M.D., Nashville
Michael H. West, M.D., Carthage
David D. Wilson, M.D., Knoxville

Oct. 14-17	Society for Medical Decision Making—Buttes, Tempe, Ariz.
Oct. 14-18	American Academy of Pediatrics—Marriott, San Francisco
Oct. 14-19	Congress of Neurological Surgeons—Hilton, San Francisco
Oct. 15-20	American College of Angiology—Westin, Maui, Hawaii
Oct. 16-22	American Academy of Psychiatry and the Law—Westin, Seattle
Oct. 18-22	American Society of Internal Medicine—Renaissance, Washington, D.C.
Oct. 19-21	American Academy of Clinical Psychiatrists—Westgate, San Diego
Oct. 19-21	Central Association of Obstetricians and Gynecologists—Desert Springs, Palm Desert, Cal.
Oct. 21-25	American Society for Anesthesiologists—Marriott, Atlanta
Oct. 22-25	American Neurological Association—J. W. Marriott, Washington, D.C.
Oct. 22-26	American College of Rheumatology—Marriott Moscone, San Francisco
Oct. 22-27	American College of Surgeons—Hilton Towers Riverside, New Orleans
Oct. 23-26	Intrastate Postgraduate Medical Association of North America—Hyatt, San Francisco
Oct. 29	American Society of Contemporary Ophthalmology—Atlanta
Oct. 29-Nov. 2	American College of Chest Physicians—Hilton and Towers, New York
Oct. 29-Nov. 3	Association of Military Surgeons in the U.S.—Hilton and Marriott, Anaheim, Cal.
Oct. 31-Nov. 5	American Medical Women's Association—Westin, Seattle

STATE

Oct. 24-27	Tennessee Academy of Family Physicians, Annual Scientific Assembly—Convention Center, Gatlinburg

Actions of the Tennessee State Board of Medical Examiners

May, 1995

Name: Jacjit Tandon, M.D. (Murfreesboro)

Violation: Unprofessional, dishonorable, or unethical conduct.

Action: License suspended pending psychological evaluation to be submitted to the Board; at that time, the Board will decide what action should be taken.

Name: Thomas Merritt, M.D. (Cobb, GA)

Violation: Disciplinary action by the State of Georgia.

Action: Dr. Merritt's Tennessee license is presently retired. Per agreed order, must submit proof that Georgia probationary period has been successfully completed, and must appear before the Board should he seek reinstatement of retired license.

MISSISSIPPI BAPTIST MEDICAL CENTER'S CHEMICAL DEPENDENCY CENTER

has been approved by the

MISSISSIPPI STATE BOARD OF MEDICAL LICENSURE

to serve as a treatment provider for

PHYSICIANS

who are chemically impaired

Mississippi Baptist Chemical Dependency Center is one of only three treatment facilities approved to treat chemically impaired physicians in Mississippi. The center has been approved to treat dentists, nurses, pharmacists and other licensed or certified health-care professionals.

The center is the state's first hospital-based private treatment center. Treatment is based on a twelve-step philosophy, utilizing assessment criteria developed by the American Society of Addiction Medicine (ASAM) for placement in appropriate levels of care.

Besides operating the state's largest adolescent and young adult alcohol and drug treatment program, the center treats chemically impaired adults from all walks of life in inpatient, day outpatient and evening outpatient programs. It also operates a satellite intensive outpatient clinic at Starkville, Mississippi.

MISSISSIPPI BAPTIST
CHEMICAL DEPENDENCY CENTER

A DEPARTMENT OF MISSISSIPPI BAPTIST MEDICAL CENTER
JACKSON MS

ACCREDITED BY JOINT COMMISSION ON ACCREDITATION
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AMA-ERF: A Legacy From One Generation of Medical Professionals to Another

The Track Record Is Impressive: $60 million contributed to the nation's medical schools in 40 years, nearly $10 million in the last five years alone. The record is that of the American Medical Association Education and Research Foundation (AMA-ERF).

As early as the 1950s the AMA recognized the difficulties facing medical schools and medical school students. To help, it established the AMA-ERF, a non-profit organization, with several funds to support medical education. The main two funds are the Medical School Excellence Fund, which provides unrestricted funds to medical schools to use as they see fit, and the Medical Students Assistance Fund, which provides grants to medical students.

After several attempts by the Board of Trustees to raise these funds, they turned to the AMA Auxiliary (now Alliance) for help. Through the efforts of medical alliances across the United States, contributions surpassed their expectations.

The success of the Medical Alliance in raising funds for AMA-ERF is due mainly to two factors: 100% of the contributions are given to medical schools, and the contributor decides which medical school will receive the contribution. You can select a department, chairmanship, or particular fund or club at the designated medical school to benefit from your contribution. As a bonus, because AMA-ERF is a non-profit organization, all contributions are tax deductible.

You can even send your annual alumni donation through AMA-ERF. However you want your contribution used, AMA-ERF has a way to do it.

Funding for medical education is more uncertain today than ever before. Federal funding has decreased steadily, and the political challenges facing medicine today only add to the picture of uncertainty. For these reasons, AMA-ERF needs your support now more than ever.

In Tennessee, the TMAA and your local medical alliance/auxiliary are instrumental in raising funds for AMA-ERF. Please support your local alliance/auxiliary, and send your donations through them when they request your help this year. If you do not have a local alliance/auxiliary, please send your contribution, made payable to AMA-ERF, along with the school of your choice and fund to Mrs. James Seals, TMAA AMA-ERF State Chairman, 8523 High Lark Lane, Knoxville, TN 37923.

Thanks to the generosity of the medical families that contribute, AMA-ERF will continue to ensure quality medical care. ❑

Brenda Seals, State AMA-ERF Chairman

EXHIBITION ATTENDANCE PRIZE WINNERS
MEDICINE ON STAGE
160th Annual Meeting of the Tennessee Medical Association

Company	Prize	Winner
All-Care Professional Services	American Cancer Society Golf Pass	Dr. Fred Ralston, Fayetteville
Carolyn Avery & Associates, Inc.	Basic Coding Workshop	Dr. C.D. Huffman, Rogersville
Carolyn Avery & Associates, Inc.	Practice Management Workshops, '95 Series	Dr. Evelyn Ogle, Memphis
Bedsole Medical Companies	Wall Clock	Dr. Dewey Thomas, Nashville
Champagne & Powell Group	Espresso and Cappuccino Coffee Maker	Dr. Patrick Burkhart, Memphis
Champagne & Powell Group	Espresso and Cappuccino Coffee Maker	Dr. Mike Mullins, Franklin
CIBA-Geigy Pharmaceuticals	Netter Atlas of Human Anatomy	Dr. James Henry, Oak Ridge
DAPAT Pharmaceuticals	Doctor's Cream, Box of	Dr. Joel Pedigo, Clarksville
Joe Dawson & Associates, Inc.	Hemocue Glucose Analyzer #120402	Dr. James High, Madison
Joe Dawson & Associates, Inc.	Hemocue Hemoglobin Photometer #651100	Dr. Melvin Goldin, Memphis
Medical Management Systems	Procedure Code Analysis	Dr. Gregory Zaar, Memphis
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Primelink LLC	Procedure Code Analysis of CPT-4, CPT-1, and HCPCS codes	Dr. Howard Young, Murfreesboro
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IMPORTANT NOTICE

Published in this section are many educational opportunities which come to our attention which might be of interest to our membership. As some of these are very long, full year schedules, and others are detailed descriptions of courses, in order to conserve space, most of them will be published in only one issue of the Journal.

IN TENNESSEE

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Dec. 1-2	21st Annual High Risk Obstetrics Seminar
Jan. 28-Feb. 3	Practical Aspects of Diagnostic Radiology/ Medical Imaging—Snowmass Village, Colo.

For information contact Division of CME, Vanderbilt University School of Medicine, D-8211 MCN, Nashville, TN 37232, Tel. (615) 322-4030.

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UNIVERSITY OF TENNESSEE

Continuing Education Schedule

Memphis

Sept. 14-15	27th Conference on the Mother, Fetus, and Newborn
Oct. 5-7	Alumni Medicine Weekend/Horner DVP
Oct. 6-7	3rd Annual Ultrasound Conference
Nov. 6-10	Advances in Medicine—Maui, Hawaii
Jan. 12-13	High Risk Perinatal Conference
Feb. 17-27	Clinical Medicine—Maui, Hawaii
Feb. 19-22	Update in Obstetrics and Gynecology—Grand Cayman Island
Feb. 24-25	Radiology Conference
March 11-15	Ob/Gyn Ski—Snowmass, Colo.
March 16-22	29th Annual Review Course for the Family Physician
March 26-31	Symposium on Critical Care and Emergency Medicine—Hot Springs, Ark.
May 8-12	Perinatal Social Work
June 6-7	General Surgery Update
July 22-27	Contemporary Issues in Obstetrics and Gynecology—Destin, Fla.
Aug. 17-22	Pharamacology of Thermoregulation
Sept. 19-20	28th Conference on the Mother, Fetus, and Newborn

Knoxville

Sept. 12-14	17th Annual Obstetric Office Ultrasound Workshop
Oct. 25-27	Perinatal Update '95—Gatlinburg
Oct. 30-Nov. 1	14th Annual Smoky Mountains Seminar in Obstetrics and Gynecology—Gatlinburg

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Environmental Health Risk Communication: A Case Study of the Chattanooga Creek Site

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The Role and Importance of Environmental Health Risk Communication at ATSDR

The Agency for Toxic Substances and Disease Registry (ATSDR), a federal public health agency in Atlanta, was created by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, more commonly known as Superfund) in 1980. ATSDR is part of the Public Health Service within the U.S. Department of Health and Human Services.

Environmental health risk communication is an important tool used by ATSDR to achieve its mission to prevent exposure and adverse human health effects and diminished quality of life associated with exposure to hazardous substances from waste sites, unplanned releases, and other sources of pollution present in the environment. Information resources, communication strategies, and training activities are some of the environmental health risk communication components ATSDR uses to promote public awareness among its diverse audiences.

ATSDR's Model-Building and Model-Testing Protocol

The complexity of factors and interrelationships involved in the public communication process led ATSDR to develop an environmental health risk communication planning model in 1993 (Fig. 1). The model-building and model-testing process consisted of three major phases: 1) conducting expert interviews and literature reviews; 2) constructing the model, comprising eight major components—ATSDR's mandate and mission; program areas; public health issue(s); audience analysis; planning, implementation, and maintenance; learning domains; internal and external factors; and evaluation; and 3) assessing the value and utility of the model.

Background and Site Description

Chattanooga Creek, a medium-sized tributary of the Tennessee River, is approximately 23.5 miles long and drains 75 square miles. The creek originates in northwest Georgia and flows 16 miles northward through a predominantly black urban community in the Chattanooga Valley before entering the Tennessee River. The Alton Park and Piney Woods communities make up 2.7 square miles of south Chattanooga and Census Tract 19. According to 1990 census data, 5,331 persons reside in Tract

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From the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Atlanta. (The Tennessee Medical Association does not own the copyright for this article, as it was written by federal employees.)

Reprint requests to ATSDR/CDC, 1600 Clifton Road, E-33, Atlanta, GA 30333 (Dr. Tinker).

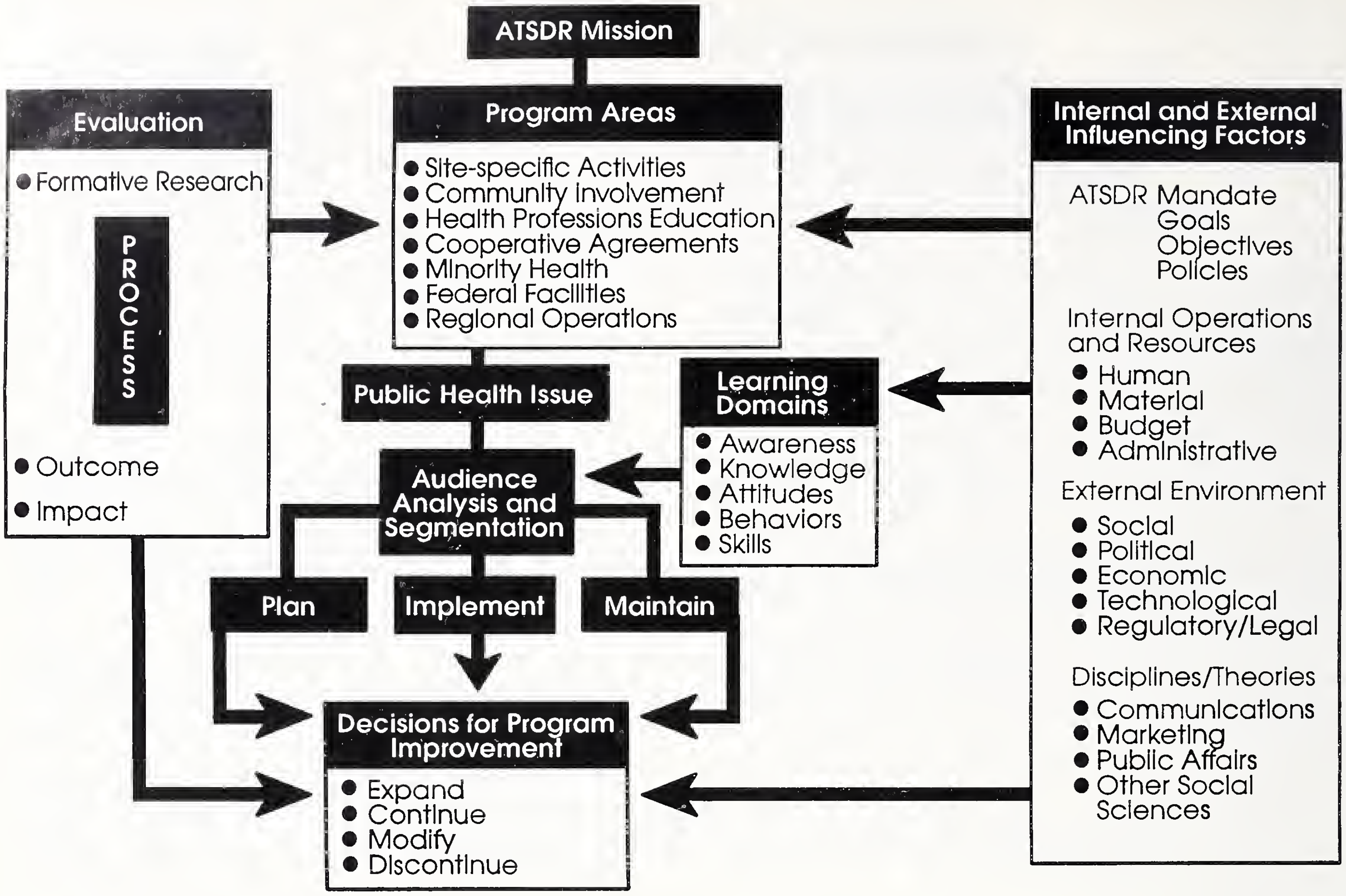

Figure 1. ATSDR's Environmental Health Risk Communication Planning Model

19. This population is 98% black and 1% white. A relatively high population of youth live in this area; 36% are younger than 18 years of age. Eighty-seven percent of the residents are younger than 65 years of age. The median value of a home in the tract is $30,000, indicating the area's relatively low socioeconomic status.

Industries engaged in the manufacture of coke, organic chemicals, textiles, bricks, and pharmaceuticals, or in wood preserving, metallurgic and foundry operations, and tanning and leather products, discharged untreated and partially untreated industrial waste into the creek.[1] The flood plain of the creek was used by the City of Chattanooga, industry, and private citizens as a dumping ground for municipal and industrial refuse and waste, including large coal-tar deposits.[1] Forty-two hazardous waste sites are located around Chattanooga Creek; 13 are state Superfund sites.

Many residents and children continue to fish, swim, and bathe in the Chattanooga Creek. Eating fish from the creek has been a common practice in the area for many years; changing this behavior among long-term residents is a major challenge. Members of Chattanooga's homeless population are reported to drink water from the creek.

ATSDR targeted this population as one that could benefit from an environmental health risk communication program and implemented a program in all elementary and middle schools attended by students who live near the creek.

Application of the Model to Chattanooga Creek Environmental Health Risk Communication Activities

The Chattanooga Creek site illustrates how the model (Fig. 2) can be used to assess ATSDR's effectiveness in developing and conducting environmental health risk communication activities for citizens and health professionals near a contaminated area.

Program Areas

ATSDR staff from DHE, DHAC, and ORO have worked extensively together to plan and implement site-specific environmental health risk communication at the Chattanooga Creek site. Communication interventions at the site have been designed to 1) enable residents and health professionals to take

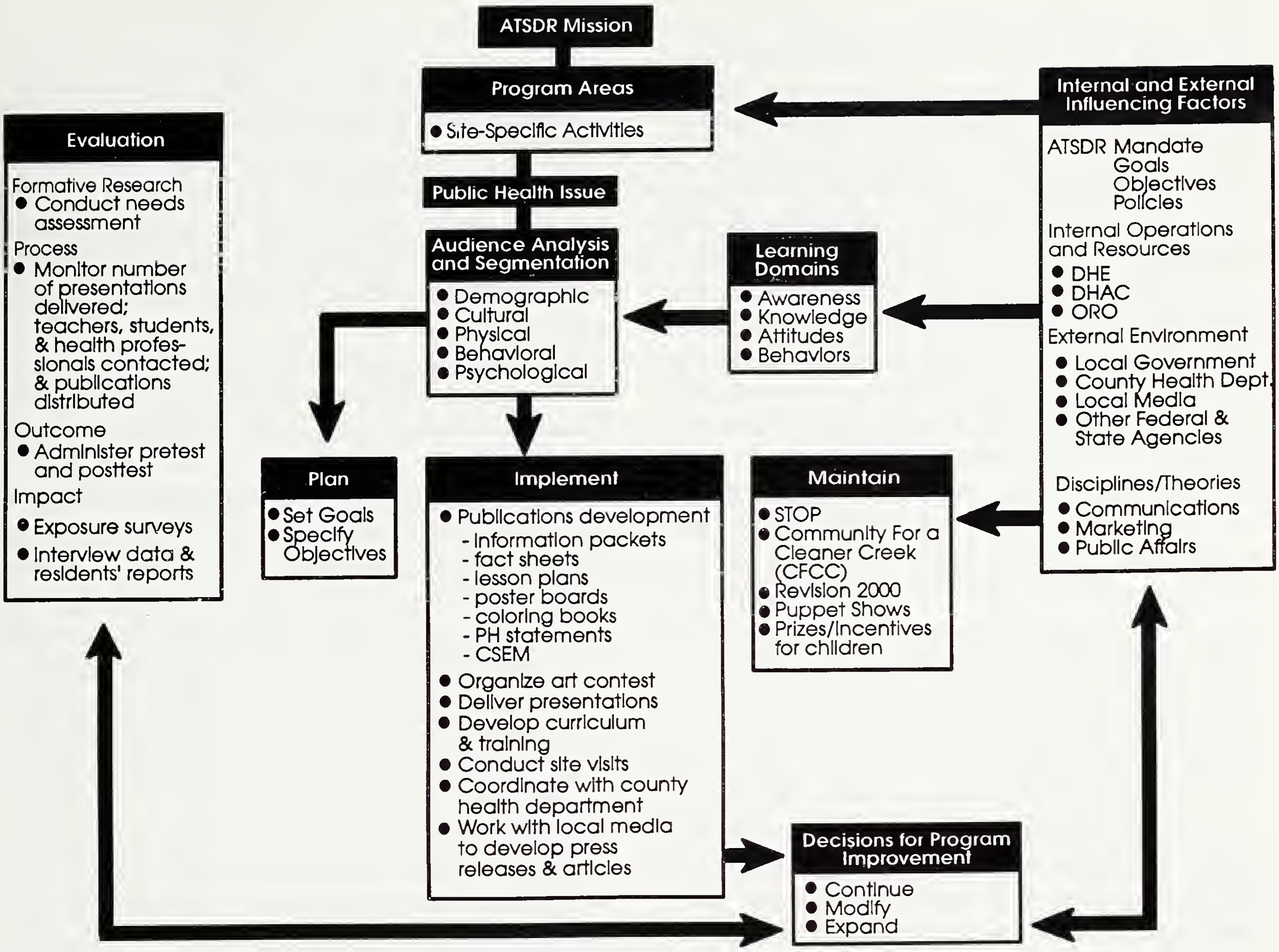

Figure 2. Application of the Environmental Health Risk Communication Planning Model to the Chattanooga Creek Site

necessary preventive actions to avoid or mitigate exposures to hazardous substances in the environment; 2) provide information about the known health effects of hazardous substances; 3) promote public awareness when health effects are unknown; and 4) provide guidance for appropriate preventive actions.

Public Health Issue

A community needs assessment revealed that children continued to fish and swim in the creek despite posted warnings, placing them at increased risk of exposure to hazardous substances at the site. Posted signs indicating *danger* and *caution* were old and could not be seen by area visitors. Residents also complained that an insufficient number of signs were posted at the creek site.

The site has been classified by ATSDR as a public health hazard because of past, present, and possible future exposure of south Chattanooga residents to chemical contaminants in three pathways in Chattanooga Creek: sediments, surface water, and fish. The population was exposed to polychlorinated biphenyls, dieldrin, 4,4-DDT, polycyclic aromatic hydrocarbons, and bacteria in those pathways. On the basis of ATSDR's activities and findings, the U.S. Environmental Protection Agency (EPA) recently added this site to the National Priorities List (NPL).[2,3]

Audience Analysis

Audiences were systematically analyzed to help prepare relevant messages and materials and to identify the routes by which high-risk groups around the sites were most likely to be reached and influenced. From the audience analysis, ATSDR identified the following target groups:

Children: Three main schools (one middle and two elementary) serve the area. The total number of students reached during the project was 1,240 (478 children from kindergarten through grade 3, 267 from grades 4 and 5, and 495 from grades 6 through 8).[4]

Health Professionals: ATSDR identified medical staff at the Alton Park Clinic, the Hamilton County

Health Department, the local hospitals, school nurses, and the local medical society.

Teachers and Parents: Principals of local schools were contacted to help coordinate environmental health risk communication efforts and to identify potential "safe areas" and community pools at the site. Teachers and parents need to be informed and educated about the dangers of the creek so that the message can be properly presented to children of the community.

Community Organizations: The Sallie Crenshaw Bethlehem Center, which is close to the Alton Park Middle School, is surrounded by 592 public housing units with a population census of 1,626 people. This population includes 94% single female heads of household and 79% unemployed heads of household. The center's mission is to provide programs that will enrich the lives of the children and adults through social, spiritual, and physical development. The center also provides meals to children using funds from Methodist ministries. The center is a logical point of contact for many residents who might use the creek for various purposes; center officials agreed to distribute ATSDR fact sheets about Chattanooga Creek at the center.

The Girls' Club, the Urban League, Stop Toxic Pollution (STOP), and the Justice Alliance are examples of other local organizations that have expressed an interest in increased involvement. Additional contacts were made with local public housing areas and the Homeless Clinic.

Local Citizens: ATSDR staff contacted local citizens involved with activities at the site. Residents will assist the Agency with long-term activities such as enlisting students from the University of Tennessee, Chattanooga, to help with risk communication and to offer assistance to younger children who may frequent the creek. A group of high school students interested in working with children from the Alton Creek and Piney Woods communities has already been identified.

Other Federal, State, County, and Local Agencies: EPA completed an extensive sampling program for Chattanooga Creek and is preparing a risk assessment using the data. EPA has placed the creek and coal-tar deposit areas on the NPL, and Chattanooga Creek is the pilot site for using geographic information systems (GIS) to better characterize exposed populations. ATSDR is working with the Tennessee Department of Health to analyze health outcome data defined by zip code areas. The National Park Service formed "Greenways," a group of community members, to plan alternative recreational areas for local children. The Tennessee Department of Health has re-posted signs 7.5 miles along the creek. The City of Chattanooga is rehabilitating a sewer overflow problem.

Plan, Implement, and Maintain Communication Strategies

Set Goals. The primary goal of the environmental health risk communication intervention at the Chattanooga Creek site was to increase public awareness about the dangers of playing, swimming, and fishing in the creek, and of eating fish caught from the creek.

Establish Communication Objectives. The principal objectives of the environmental health risk communication intervention at the Chattanooga Creek site were these:

- Reach all or most of the schoolchildren living in the Chattanooga Creek area with information about hazards at the creek before the summer months when exposures are greatest. Outreach to school-aged children was intended to prevent the children from swimming or fishing in the creek.
- Provide schoolteachers with training materials about hazards at the site. Develop a curriculum or assist in the development of curricula for teachers near the site.
- Educate parents and other family members through the children and teachers.
- Identify and educate school health nurses who serve the south Chattanooga area.
- Educate local physicians and community public health practitioners through the Chattanooga County Health Department and the Alton Park Clinic.
- Develop reusable displays for public places and provide them to appropriate facilities such as school libraries and youth clubs.
- Develop and pilot test evaluation tools to measure the effectiveness of actions taken.

Implementation of Environmental Health Risk Communication Strategies

A total of 1,240 students, kindergarten through grade 8 at three schools (two elementary and one middle), were reached through the environmental health risk communication interventions. The children ranged in age from 5 years to 15 years. Three different presentations were tailored to the different age groups; each presentation repeated the same basic message—"don't swim or fish in the creek." Some of the presentations were filmed by ATSDR's Visual Information Center.

Materials Development and Distribution

Environmental health risk communication with the students involved the use of "catchy" and colorful visual aids combined with a variety of activities. Coloring materials were distributed to younger children (kindergarten through grade 3). The children received a 10 × 14-inch photograph of a contaminated river with hazardous waste seeping in from various sources such as chemical companies and other facilities. In the center of the creek was a duck swimming in the contaminated environment. The picture symbolized Chattanooga Creek; the duck represented creatures living in the polluted water.

An art contest was held for 4th and 5th graders. The children were challenged to draw a picture of a "Creek Geek" who fishes and swims in the creek. Prizes were awarded.

Slides and overheads were used to educate older children. An entire day was spent at each school. Poster boards, a fish dance, and a rap song were developed as part of the overall intervention program. Teachers received information packets for reinforcing the prevention message. The packets included lesson plans that provided information and ideas for teaching children about how they could reduce their exposure to hazardous waste and water pollution.

More than 3,000 fact sheets were distributed to children and teachers to share with parents and family members. The Community Center was provided with more than 200 copies of the fact sheet. Maps were distributed showing the approximate location of the schools and homes in relation to the creek. Teachers in the middle and elementary schools received a public health statement explaining the health effects of lead, a contaminant of concern at the creek. Material is also being prepared for distribution through school and community libraries.

Coordination with the Hamilton County Department of Health. The Hamilton County Health Department is near the Chattanooga Creek site. Four nurses at the health department are responsible for all of the Chattanooga city schools in this area. Members of ATSDR met with the director and chief physician of the county health department to plan environmental health risk communication activities for health professionals in the site area. An environmental health risk communication plan was developed with input from the nurses. ATSDR recognized that local nurses and other health care professionals are critical contacts for parents and children living around the site. Additional contacts were made with local residents through community representatives; one of the goals of making those contacts was to determine how patients were being treated at clinics.

Working with Local Media. ATSDR worked closely with the local media to develop messages that would inform and involve local residents. For example, an article published in the *Chattanooga Times* announced a public meeting to discuss contamination at the site.

Learning Domains

The main goal of environmental health risk communication at the Chattanooga Creek site was to create *awareness* and to warn children of the dangers of playing, swimming, and fishing in the creek, and of eating the fish from the creek. The experiments, lectures on pathways, descriptions of contaminants at the site, maps, and coloring materials were intended to increase general *knowledge* about water pollution.

Approximately six students from each class admitted to fishing and swimming in the creek. Through use of the catchphrase "Don't be a Creek Geek," ATSDR tried to instill the *attitude* that swimming or fishing in the creek was "uncool" and "nerdy." Students in the 4th and 5th grades were asked to draw what they thought a Creek Geek would look like. The students were asked to serve as role models for other children living in the area and to educate family members about the dangers of swimming and fishing in the creek. Many of the children who swam and fished in the creek either accompanied family members or have seen family members swim and fish in the creek. *Behavior* that has been part of the life of the community is very difficult to change.

Internal and External Influencing Factors

Internal Factors. The environmental health risk communication intervention conducted at the Chattanooga Creek site promotes the ATSDR mission of educating the community about the dangers of contamination from hazardous substances in the air, water, soil, and fish.

Both DHAC and DHE are working in partnership to offer assistance to health professionals, physicians, state officials, teachers, students, EPA, and the community. DHAC became aware of the site when a Chattanooga resident petitioned ATSDR for a public health assessment. Since then, DHAC has completed a 40-page document containing environmental and health data describing site contamination.

DHAC has recommended a number of actions. For example, DHAC recommended that DHE conduct community and health professions risk communication at the site. This site is viewed as a

TABLE 1

PRESENCE OF FACTORS SUPPORTING ENVIRONMENTAL HEALTH RISK COMMUNICATION EFFECTIVENESS

Model Components	Supporting Factors	Significance, Meaning for Site
ATSDR Mission	**Adequate-Ideal:** EHRC activities advance ATSDR's capacity to effectively design, deliver, and evaluate site-specific messages and materials.	Ongoing review of relevant planning documents as well as any goals and objectives drafted for the overall education program.
Program Areas	**Ideal**: Interdivisional coordination among DHE, DHAC, and ORO ensures consistency in messages, decisions, and actions.	ATSDR's divisions and offices will continue to share information, knowledge, expertise, and resources to maximize communication effectiveness.
Audience Analysis and Segmentation	**Ideal**: Systematic analysis revealed diverse interests, needs, concerns, and priorities among residents at the site.	Further define communication strategies in terms of the function they serve, the audiences they reach, and the context in which they are delivered.
Learning Domains	**Adequate-Ideal**: Specific communication strategies have been developed and targeted to each of the four major learning domains—awareness, knowledge, attitudes, and behavior.	Produce and test messages for their credibility, utility, appropriateness, and appeal to diverse audiences.
Plan	**Adequate-Ideal**: ***Strategies and Guidelines for Site-Specific Health Education*** was used extensively in the planning process to conduct needs assessment and to specify program goals and objectives.	Continue to integrate community concerns, delivery systems, and trusted intermediary organizations into the planning process.
Implement	**Ideal**: An aggressive program of public outreach and education has been put in place through materials development and dissemination, coordination with local health and civic organizations, and working with the local media.	Communication activities take place through all appropriate media and organizational channels to support other elements of the education program.
Maintain	**Adequate-Ideal**: Community For a Cleaner Creek and STOP are examples of community-based organizations designed to promote and monitor EHRC activities as a standard part of community health care, health lifestyle changes, and educational systems.	Continue developing long-range plans and identify ways and means to sustain the productive life of EHRC activities and efforts beyond ATSDR's involvement at the site.
Internal and External Influencing Factors	**Adequate:** ATSDR recognizes how site-specific social, economic, cultural, and political forces can present threats as well as opportunities to desired program outcomes.	Commitment of necessary Agency funding, staff, and resources to promote communication effectiveness.
Evaluation	**Adequate**: Process evaluation is conducted to determine if overall program is proceeding on time, on strategy, and within budget.	Outcome and impact evaluation methods focus on the quality of message development and delivery, continual improvement in program efficiencies and effectiveness, and behavior change strategies.
Decisions for Program Improvement	**Adequate-Ideal**: As of 1994, EHRC plans for the site are to continue, modify, and expand.	EHRC activities at the site promote methods development, utility, and evaluation of ATSDR's communication messages and materials.

Ratings: Ideal, Adequate-Ideal, Adequate, Minimally Adequate, Inadequate-Adequate, Inadequate, Absent-Inadequate, and Absent.

model for showing how health assessors and health educators can work together to accomplish common goals and tasks. Health assessors from DHAC and health educators from DHE conducted site visits together, and there was an easy transition from preparing a public health assessment to implementing environmental health risk communication.

External Factors. Chattanooga, which plans to host an international environmental conference within the next two years, is looking forward to being recognized as the "Environmental City." Because of this desire, the mayor and other local officials are interested in actions being taken to clean up Chattanooga Creek. Both DHAC and DHE have held meetings to update Mayor Gene Roberts and his staff on ATSDR activities. Officials at various levels have been informed and involved at the site. An environmental health risk communication program for nurses and physicians that involved the school superintendent was conducted simultaneously with programs undertaken at the schools.

EPA and ATSDR have worked closely on this site as well. ATSDR issued a public health advisory on the coal-tar deposits, identifying them as an urgent public and safety hazard. As a direct result, EPA placed the coal-tar deposits on the NPL.

Evaluation

A 12-question pretest on fishing and swimming habits at the creek was distributed to the school-aged children before they participated in the risk communication activities. Pretest and posttest results will be compared with those from a similar questionnaire administered in the early 1980s. Evaluation information will serve as baseline information when ATSDR conducts follow-up activities.

A process evaluation conducted by ATSDR staff showed that presentations were delivered to three schools in three days, workshops were held in 40 classrooms, and approximately 1,200 students and 40 teachers attended. More than 3,000 fact sheets were distributed at local schools, community centers, and the Hamilton County Health Clinic.

The Model's Contribution to Improving the Effectiveness of ATSDR's Environmental Health Risk Communication

Preliminary findings (Table 1) from the Chattanooga Creek site show how effectively ATSDR has applied Agency-specific principles and standards in each of the major model components.

Conclusion

ATSDR intervention at the Chattanooga Creek site and similar future initiatives demand a well-defined and targeted approach to environmental health risk communication planning and implementation. As ATSDR continues to address the many health problems requiring sustained individual behavior change, change of community norms, and policy and environmental change, we must better understand what motivates individuals and communities to action. Environmental health risk communication strategies and messages must be congruent with individual and community values and priorities. Using the model described in this report to systematically plan and implement environmental health risk communication enhances ATSDR's capacity in the following areas:

- better understand and define the relationship between environmental health risk communication program purposes, goals, objectives, and activities;
- incorporate essential environmental health risk communication elements and principles as preconditions for effective action;
- make informed decisions about the most effective use of environmental health risk communication strategies and resources; and
- promote a cooperative approach to program planning and information sharing between the Agency and its partners and constituents. ☐

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Adenocarcinoma of the Epiglottis: Report of a Case

RONALD H. LANDS, M.D.

Introduction

Primary adenocarcinoma of the larynx is unusual, and of this small group, adenocarcinoma of the epiglottis is rare. I report such a case found incidentally in an asymptomatic man previously treated for squamous cell carcinoma of the pyriform sinus. A discussion of his treatment and a review of the literature follow.

Case Report

A 58-year-old white man was examined in routine follow-up after treatment for a squamous cell carcinoma of the pyriform sinus treated with radiation therapy four years earlier. On examination, a 3-mm nodular lesion located on his anterior vocal cord was biopsied in passing, even though it did not appear to be malignant. The pathologist described an invasive moderately differentiated adenocarcinoma not involving the overlying squamous mucosa. Chest x-ray and liver function tests were without evidence of primary or metastatic disease. He had previously received maximal doses of radiation therapy to the area from which the nodule was removed. After much discussion concerning the risks and benefits of radical surgery or less mutilating procedures, an epiglottectomy was performed. Twenty months after his diagnosis, his disease recurred locally.

Discussion

Adenocarcinoma accounts for less than 1% of malignancies in the larynx. These unusual tumors probably arise from the minor salivary glands of the larynx. The areas of increased density of salivary glands seem to have the higher incidence of primary adenocarcinoma. The epiglottis is relatively devoid of these glands, and presumably, for this reason, adenocarcinoma of the epiglottis has been previously reported only four times in the English literature.[1]

Metastasis to the larynx has been described, and was considered in this patient. Adenocarcinoma, usually metastatic from the kidney or the breast, may involve the larynx. Melanoma, however, is the most common tumor to metastasize to the larynx.[2] These considerations were not clinically relevant in this patient.

While there is little information to guide treatment on the basis of clinical patterns, malignancies originating in the mucous glands are noted for their aggressive behavior. They are not associated with smoking or prior radiation therapy, both of which were concerns in this patient.

Therapy is usually a combination of radical surgery and radiation therapy. Local and regional lymph nodes are often involved, and local recurrence is common. Chemotherapy has been a disappointment in the management of salivary gland adenocarcinoma of the head and neck.[3]

The small size of this primary adenocarcinoma and a desire to adequately treat it with minimal mutilation resulted in epiglottectomy. Radiation therapy was not an option, and chemotherapy was not offered. Whether more radical surgery would have provided a different outcome is problematic. Radical surgery should, however, be considered, even in patients demonstrating minimal evidence of primary disease. ❑

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Cardiac Contusion: A Case Report of Left Ventricular Cardiac Contusion

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Introduction

It is well known that blunt thoracic trauma can induce myocardial damage either directly or indirectly. Estimates place the incidence of cardiac contusion at between 16% by Leinoff[1] and 76% by Sigler[2] which are autopsy and clinical series respectively. Kissane[3] showed that approximately 15% of fatal chest trauma victims have myocardial contusions demonstrated at autopsy. Myocardial contusion may represent the most common unsuspected visceral injury directly responsible for death in fatally injured blunt trauma victims as evidenced by Liedtke,[4] but the incidence is unknown. Parmley et al[5] believe that the true incidence of blunt cardiac injury is not well documented mainly because of the inability of making an accurate clinical diagnosis. The accurate diagnosis of cardiac contusion remains just as difficult today as it was in 1676, when the first case was described.[6] Although the physician today has a greater arsenal of diagnostic tests, that sometimes can be a two-edged sword. Burchell's couplet[7] continues to describe the situation faced in securing the diagnosis:

And always with a heart contusion
Arise both doubt and much confusion

Case Report

A 43-year-old unrestrained female driver was involved in a multiple roll-over motor vehicle accident. At the scene, her vital signs were a systolic blood pressure of 40, respiratory rate of 16/min, weak carotid pulses, and a Glasgow Coma Scale of 8. She had a seizure, and attempts at intubation were unsuccessful. There was no record of an EKG tracing at the scene.

She was transported to Vanderbilt University Medical Center, where physical examination revealed a scalp laceration, multiple abdominal abrasions, multiple long bone fractures, and an unremarkable cardiothoracic examination. The initial EKG rhythm was sinus (HR 63), becoming sinus tachycardia (HR 158) over the next ten minutes.

The patient was taken to the operating room for a ruptured diaphragm, and a left chest tube was placed for a hemothorax. During repair of the diaphragm, the bloody drainage from the chest tube increased, and the cardiac rhythm deteriorated into ventricular fibrillation. A left thoracotomy revealed a lacerated and contused left ventricle. Repair was attempted, but she was unresponsive to ACLS protocols and was pronounced dead approximately four hours after arrival.

Pathophysiology

There are two mechanisms of cardiac injury resulting from blunt thoracic trauma: direct cardiac trauma and indirect cardiac trauma involving the "hydraulic ram effect."[8,9] Direct injury can result from rapid deceleration or acceleration, with the heart impinging upon the sternum or vertebral column. One additional point to remember is that rapid deceleration from a high velocity is not a prerequisite. There have been documented cases of myocardial injury with deceleration from velocities as low as 20 mph.[10] Whenever there is sufficient transfer of kinetic energy resulting in cardiac injury, it is not uncommon to have associated injuries such as sternal, clavicular, or upper rib fractures. Although associated injuries may not be uncommon, it is uncommon to have the external evidence of cardiac contusion exemplified by this patient.

The "hydraulic ram effect" indirectly results in cardiac injury through abdominal and/or lower extremity compression which upwardly displaces abdominal viscera with resulting direct cardiac injury. It is important to remember that although cardiac contusion is most commonly seen in the setting of a multi-trauma patient, cardiac injury can result from sports injuries, falls from high elevations, kicks by animals, and even closed-chest massage during cardiopulmonary resuscitation.

Histologically, the hallmark of cardiac contusion is cellular injury with patchy interstitial hemorrhage, lacerations, and cellular fragments. Unlike myocardial ischemia, the transition between normal and abnormal tissue is abrupt. The damaged area is infiltrated with polymorphonuclear leukocytes within 24 hours, followed by edema and necrosis of muscle fibers.[11] Contusion scars have been shown to have deposits of hemosiderin due to interstitial hemorrhage, but the clinical implications are not known.

Through clinical[5,10,11] and experimental[12,13] data, we also know that the injured area is nourished by a nor-

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mal and perhaps enhanced blood supply. It is postulated that the peculiar healing of contusions, with patchy scar interspersed with normal myocardium, may result from the normal circulation.[10]

In reviewing the spectrum of cardiac injury that may result from blunt trauma, a less severe form exists called "cardiac concussion."[14] Concussions lack cellular damage, the hallmark of contusions. Although concussions may not be as damaging as contusions, patients with concussions can still experience the sequelae associated with contusions and should be treated in the same manner. This is why concussions are not considered benign.

Diagnostic Dilemma

As with so many other diagnoses, a high index of suspicion is needed because there is a paucity of physical signs in cardiac contusion. There is neither one physical finding nor one test/procedure that can make the diagnosis with absolute certainty. The reliance on CPK-MB fraction is fraught with errors.[15] An example is skeletal muscle, which contains two types of fibers, type I and type II. Type II fibers contain CPK-MB in addition to CPK-MM. An increase in CPK-MB has been seen in Duchenne's muscular dystrophy, gangrene, severe ischemia of the extremity, idiopathic myoglobinemia, Reye's syndrome, and Rocky Mountain spotted fever. Although none of these had a role in this patient, ischemia is a potential cause of a falsely elevated CPK-MB fraction in a multiple trauma patient. The CPK-MB fraction usually remains less than 5% of the total when due to the preceding conditions,[16] an important point to remember in the trauma population. Perhaps the best utilization of CPK-MB is in the patient with EKG abnormalities, which was the conclusion of Reynolds et al.[15] CPK-MB is not mandatory, but aids in the diagnosis.

The most reliable aid to the diagnosis of cardiac contusion still remains the EKG.[17-19] Cane et al showed that EKG changes manifested at any time between admission and more than 48 hours later, with the most common arrhythmia being sinus tachycardia. This is not to say that sinus tachycardia is a marker for a contusion, because most people in an emergency room, whether they walked in or were brought in, will exhibit it. One additional EKG abnormality reported in this group was a prolonged QT interval of greater than 0.45 (corrected Qtc). The most common ventricular rhythm is premature contractions.[20] The EKG delineates the rhythm, which alone or in combination with the CPK-MB fraction is the most reliable diagnostic tool available.[18,21,22]

The radionuclide scan is not only unreliable in myocardial contusion but is unreliable in serious myocardial concussions as well.[21] Scans fail to diagnose cardiac contusions because: (1) Diagnostic criteria are not standardized for contusions. (2) Scans are not easy to interpret. (3) The only "gold standard" is autopsy. (4) Uptake of the nuclide by the sternum and ribs. (5) "False-negative" due to contusion *without* cellular death and nuclide uptake. In an unstable patient this is not a diagnostic option. In a patient who is stable, this scan may aid in determining the extent of injury and help to quantitate the ejection fraction. This is not a test high on the decision tree.

One modality that has received increased attention in blunt chest trauma is echocardiography. Pandian et al[23] and Miller et al[24] both demonstrated the utility of 2-D echocardiography in the diagnostic workup of contusion. Advantages of echo include estimation of chamber size and volume, visualization of thrombi, wall motion abnormalities and wall thickness, as well as estimation of ejection fraction. Disadvantages are that the left ventricle may be difficult to visualize and the echo is technically unsuccessful in 10% to 20% of patients, especially trauma patients with thick chest walls from volume resuscitation.

Management

The lack of physical findings and difficulty in establishing the diagnosis of cardiac contusion should not delay a patient's going to the operating room for needed surgical stabilization. The patient's condition may actually be optimized during surgery.[22] It is important that a patient with a contusion be given fluids judiciously because the myocardial contractility is impaired.[25] Large volumes of fluid resuscitation could lead to congestive heart failure and death. In a patient with a suspected contusion who is not going to the operating room, admission to an intensive care unit is mandatory for at least 48 hours. This will allow sufficient time to review all CPK-MB fractions, if elected, and EKGs (the two tests most commonly used) both obtained every eight hours for 24 hours. If no abnormalities are noted, the patient can be transferred out of the ICU. Once a patient is discharged, close follow-up is mandatory because of the development of possible sequelae, valvular injury (aortic and mitral), coronary artery thrombosis and spasm, myocardial rupture, hemopericardium, pericardial effusion, constrictive pericarditis, pericardial calcification, and ventricular aneurysm.[14]

Conclusions

A high index of suspicion is needed to diagnose a cardiac contusion. In this patient there were no physical signs, and no abnormalities noted on the initial EKG. The only hint of the diagnosis was the history of rapid deceleration. If a patient is suspected of having a contusion, this should not delay surgery. The patient should be admitted to the ICU and followed with serial EKGs and CPK-MB fraction determinations. The treatment of contusion is similar to that of infarction: bed rest with monitoring. The patient should be given oxygen because of a significant correlation between hypoxia and complications."[18] Since there is decreased

(Continued on page 355)

Severe, Recurrent Peptic Ulcer Disease: A Case of the Zollinger-Ellison Syndrome

Case Report

A 73-year-old man who was transferred to the Nashville VA Medical Center for further evaluation of recurrent and severe peptic ulcer disease had had few prior medical problems when epigastric discomfort developed in October 1994. An esophagogastroduodenoscopy (EGD) performed at a local hospital revealed mild esophagitis and duodenitis, which was treated with H_2-antagonists. This afforded initial relief, but three months later he experienced nausea, vomiting, and epigastric abdominal discomfort with several episodes of hematemesis. A repeat upper endoscopy revealed ulcers in the esophagus and duodenum, biopsies of which revealed no evidence of malignancy or *H. pylori*. Omeprazole and sucralfate were administered with minimal symptomatic relief. After repeated episodes of hematemesis and melena, the patient was transferred to the Nashville VA Medical Center.

On arrival he was found to be moderately dehydrated. Postural and symptomatic change in blood pressure occurred from 160/60 mm Hg supine to 115/70 mm Hg standing. Examination of heart and lungs was normal. There were no cutaneous or mucosal signs of bleeding diathesis. His abdomen was soft and nontender with hyperactive bowel sounds. A large amount of melenic stool positive for occult blood was present in the rectal vault. His hematocrit was 40% with a mean corpuscular volume of 93 cu μ. Platelet and white blood cell counts were normal.

The patient was treated initially with intravenous fluid replacement and acid-suppression. EGD was repeated, and revealed severe erosive esophagitis and duodenitis. A serum gastrin level obtained at the referring hospital was reported to be elevated at 463 pg/ml. He was taking omeprazole at that time; consequently the result was difficult to interpret.

After recovering from the acute gastrointestinal hemorrhage, the patient was readmitted for a secretin stimulation test. Acid-suppressive therapy was discontinued for four days. Five minutes after the intravenous injection of secretin, his serum gastrin level increased from a baseline of 240 pg/ml to 840 pg/ml. This was diagnostic of the Zollinger-Ellison syndrome. Omeprazole was administered in large doses while plans were made to localize the gastrinoma.

Discussion

In the mid-1950s, Zollinger and Ellison first described the syndrome that now bears their names. They reported a series of patients with benign peptic ulceration of the upper gastrointestinal tract and extremely high gastric acid secretion. After surgical treatment of the peptic ulcer disease, acid-peptic injury at the site of the anastomosis occurred frequently with poor postoperative healing and perforation. Non-β-islet cell pancreatic tumors were found in many of these patients. Elevated serum gastrin levels were discovered in these patients as biochemical assays improved. Pancreatic gastrinomas were identified.[1-3]

Gastrin is normally secreted by G-cells in the antral mucosa; it stimulates gastrin acid secretion and the proliferation of parietal folds.[3] Hypergastrinemia is often present with hypochlorhydria, stimulated by low gastric acidity. Uncontrolled secretion of gastrin in the Zollinger-Ellison syndrome (ZES) results in a dramatic increase in the production of hydrochloric acid in the stomach. The trophic effects of this hormone also stimulate parietal cell growth, leading to large gastric folds.[1,2]

The clinical manifestations of this syndrome are predominately caused by excess gastrin. The overproduction of gastric acid thus leads to upper GI ulceration in more than 90% of patients with this syndrome. These ulcers are often multiple, recurrent, and resistant to standard therapy. Acid-peptic disease of the esophagus—including ulceration, strictures, Barrett's transformation, and perforation—is also frequently seen. Diarrhea, probably caused by small bowel injury due to hypoacidic secretions of the stomach, may be the initial symptom in 40% of patients with ZES.[2]

Gastrinomas also occur in association with other endocrine neoplasms in the MEN-1 syndrome (parathyroid adenomas, pituitary tumors, pancreatic adenomas). Patients with ZES may occasionally have either hypercalcemia from hyperparathyroidism or visual field deficits and other endocrinopathies from pituitary tumors.[2]

The diagnosis of ZES may be quite straightforward in patients with peptic ulcer disease, gastric acid hypersecretion, and extreme hypergastrinemia (1,000 pg/ml). Many patients do not have such a classic presentation, with 18% to 25% of patients not having ulcer disease at the time of diagnosis. Gastrin levels may be only marginally elevated 50% of the time. The secretin stimulation test has become the most important confirmatory study of ZES. Normally secreted by the duodenum in response to the arrival of acidic stomach contents, secretin induces bicarbonate and bile release into the small intestine. When injected intravenously, secretin will paradoxically and transiently increase serum gastrin levels by a small amount in most normal subjects. For reasons that are poorly understood but well documented, patients with ZES have marked increases in gastrin levels with the injection of secretin, and an increase in the serum gastrin level by 200 pg/ml over

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Presented by J. Andrew Alspaugh, M.D., chief medical resident, Nashville VA Medical Center.

baseline values after the intravenous injection of secretin (2 U/kg) is virtually diagnostic of ZES.[3]

Treatment of this syndrome requires blocking the effects of gastrin as well as locating and excising the tumor. Inhibition of gastric acid by H_2-blockers was a major breakthrough in ZES. Gastric acidity, however, is inadequately controlled in 65% of patients with this therapy alone, and surgical intervention (vagotomy, total gastrectomy) may be required. Omeprazole has revolutionized the medical care of patients with gastrinomas and has virtually eliminated the need for such major surgeries.[2]

Though the ideal treatment of ZES is surgical resection of the gastrinoma, this is possible in only 20% of cases. Localization of the tumor may be difficult since the gastrinoma may be in the pancreas, duodenal wall, lymph nodes, or ovaries, as well as in several other tissues. Useful tests in locating the tumor include contrast CT scanning, transabdominal and endoscopic ultrasound, portal vein sampling for gastrin, and radionuclide Octreotide scanning. Surgical exploration is often necessary, although many gastrinomas cannot be found even surgically. Once located, more than one-half of the tumors are malignant. Local tissue invasion as well as regional and distant metastasis may be present at the time of diagnosis.[1,2]

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A Case of Atypical Cyanosis

Case Report

A 24-year-old man with no known past medical history developed a hacking nonproductive cough accompanied by dyspnea on exertion over several days. Physical examination revealed white lesions of the buccal mucosa consistent with thrush. Chest x-ray revealed a bilateral diffuse infiltrate consistent with *Pneumocystis carinii* pneumonia. HIV test was positive by ELISA and confirmed by Western Blot. The CD4 count was 6/cu mm. Because the patient was allergic to sulfa drugs, his pneumonia was treated with dapsone, clarithromycin, and trimethoprim.

Ten days later the patient presented himself to the hospital complaining of extreme shortness of breath, weakness, and fever over the past 12 hours. He denied chest pain, myalgia, or headaches. He reported weight loss of 5 lb over the previous two weeks.

On physical examination, the patient was dyspneic and had profound central cyanosis despite oxygen supplementation. He was mildly confused and in moderate distress. His vital signs were notable for temperature of 101.4°F, a heart rate of 116/min, and a respiratory rate of 26/min. His physical examination was otherwise unremarkable. Arterial blood gases showed a pH of 7.47, P_{CO_2} 34, and P_{O_2} 72 on 4 L/min O_2 by nasal cannula. His hematocrit was 35%. The methemoglobin level was 34% (normal <1%). The diagnosis of methemoglobinemia secondary to dapsone use was made.

The patient's medications were discontinued. He was treated with IV pentamidine and three doses of methylene blue 200 mg IV every two hours. After two doses of methylene blue, the cyanosis and shortness of breath resolved. The methemoglobin level decreased to 15%. During the first 24 hours of the treatment, the PCV dropped and stabilized 13% below the level at admission, with laboratory evidence of intravascular hemolysis. Over the course of four days, methemoglobin levels dropped below 1%, and the patient recovered uneventfully.

Discussion

This patient suffered severe methemoglobinemia secondary to the use of dapsone for *Pneumocystis carinii* pneumonia. Methemoglobin is the term used to describe hemoglobin that contains iron that has been oxidized from the ferrous (Fe^{2+}) to the ferric (Fe^{3+}) state. With this loss of an electron, methemoglobin cannot effectively bind or transport oxygen. Oxidization of hemoglobin iron is constantly occurring at a slow rate in humans, but levels of methemoglobin are kept below 1% by the reductase enzyme system, which includes nicotinamide-adenine dinucleotide phosphate (NADH) and cytochrome b5.[1]

Rarely, clinical methemoglobinemia can result from a congenital defect, such as cytochrome b5 deficiency or hemoglobin M (hemoglobin that preferentially stabilizes iron in the ferric state). More commonly, methemoglobinemia is acquired following exposure to drugs or toxins that greatly accelerate the oxidization of hemoglobin and overwhelm the reductase enzyme system. Infants are particularly susceptible. Frequently implicated substances include nitrates, nitrites, sulfones (e.g., dapsone),[2] lidocaine, and benzocaine. High levels of nitrites leading to severe methemoglobinemia have been found in well water and cured meat.[3]

As methemoglobin has a bluish-brown color, patients with more than a 10% concentration will appear cyanotic. In contrast to the patient with cyanosis due to cardiac or pulmonary disease, however, the partial pressure of oxygen in the blood will be normal. The oxygen saturation as measured by pulse oximetry will be abnormally low. Methemoglobinemia should be included in the differential diagnosis of patients with a

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Presented by Bartosz Rydzewski, third year medical student, Vanderbilt University School of Medicine, and Rufus Davis, M.D., chief medical resident, St. Thomas Hospital, Nashville.

low O_2 saturation but a normal PaO_2.[4] At methemoglobin levels of approximately 40%, patients will note fatigue, dyspnea, headaches, and tachycardia. Levels of 70% or more can be fatal.

Toxicity of methemoglobinemia is compounded by the effect of an oxidized heme group on the remaining normal heme groups in the molecule. The affinity of the normal groups for oxygen is greatly increased, and thus their ability to unload oxygen in peripheral tissues is reduced. Tissue hypoxia is the result.[3]

The diagnosis of methemoglobinemia should be suspected in anyone with atypical cyanosis and a normal arterial blood gas. A useful diagnostic bedside test involves obtaining a blood sample and exposing it to air. Dark, cyanotic blood with cardiopulmonary disease will promptly turn red, while the dark blood of methemoglobinemia will remain brown. Methemoglobin is quickly identified by laboratory analysis and is easily quantified.[5]

Methylene blue remains the standard treatment for methemoglobinemia. Methylene blue is reduced to leukomethylene blue by reacting with NADP. Leukomethylene blue is then oxidized as it converts methemoglobin to reduced hemoglobin. The usual dose is 1 to 2 mg/kg given over five minutes to patients with symptomatic disease. Because methylene blue depends on adequate stores of NADP for efficacy, the drug should not be given to patients with G6PD deficiency, as it may actually exacerbate their disease.[6] Some clinicians will rule out G6PD deficiency in their patients before using oxidants such as dapsone.

Non-enzymatic-reducing agents such as ascorbic acid and riboflavin have been used in chronic disease, but have little role in acute, toxic cases as they act too slowly. ❑

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Trauma Rounds . . .

(Continued from page 352)

myocardial performance, it is advantageous to monitor the patient with a pulmonary artery catheter for hemodynamic optimization. And finally, the use of anticoagulation remains controversial in this group of patients because of possible mural thrombus formation. After 48 hours, if no abnormalities are noted, the patient can be transferred. Once the patient is discharged from the hospital, the diagnostic dilemma of a documented contusion begins, because complications can still develop years later. ❑

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Department of Health Report

Tennessee Rabies Update

BERNIE L. RHOADES, M.P.A., REHS/RS

Worldwide, rabies is the most common and feared form of viral encephalitis. Transmission of rabies through dogs was mentioned over 4,000 years ago in Babylonia. The belief is that rabies migrated to the New World across the Bering Strait some 70,000 years ago. Currently, in Africa, Asia, and Latin America, 50,000 to 60,000 cases of dog rabies and an estimated 3,200 human deaths occur each year.[1,2]

Rabies control programs in the United States have been effective in drastically reducing the number of dog rabies cases. Laboratory confirmed cases of rabies in dogs have decreased from almost 7,000 in 1947 to 130 in 1993.[3] However, a vast reservoir of wild animal rabies still remains in this country. U.S. physicians treat 1 million to 2 million animal bites per year;[4] and six human rabies deaths were reported in 1994, four of them the result of exposure to variants of bat rabies. The fifth death resulted from exposure to canine rabies in Haiti, and the sixth was identified as coyote/border dog rabies from a 5-week-old domestic puppy. One of these deaths occurred in Tennessee, and resulted in rabies postexposure prophylaxis being administered to 47 persons involved in the incident. This death was the result of exposure to a rabies virus variant associated with silver-haired bats. During the period 1977-1994, only 27% of the 33 human deaths in the United States revealed clear evidence of an animal bite.[5]

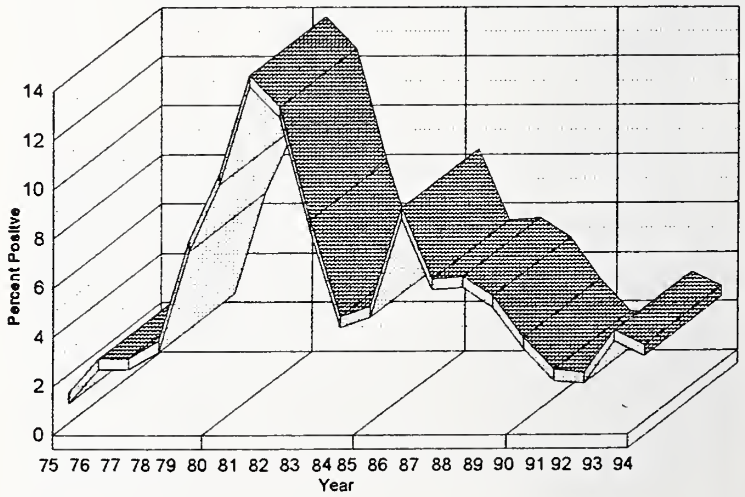
The National Association of Public Health Veterinarians recognizes three principles of rabies prevention and control. First is the prevention of human rabies either through the elimination of exposure to rabid animals or through prompt treatment of wounds combined with appropriate passive and active immunization. The second principle relates to the maintenance of effective programs to ensure vaccination of all dogs and cats and to control strays and unwanted animals. The control of rabies in wildlife is the third principle.[3(p9)] Though the Tennessee Department of Health (TDH) has no responsibility in this third area, it does maintain a surveillance program to identify the locations of possible rabies endemic areas within the state.

In 1953, the State of Tennessee passed legislation making a current rabies vaccination mandatory for dogs; cats were added in 1972. This authority also mandates that rabies vaccination clinics be conducted for dogs and cats in each county of the state, and a record kept of each animal vaccinated. The number of dog rabies cases in Tennessee has decreased dramatically since the mandatory rabies vaccination law was introduced. In 1953, 242 cases of rabies in dogs were confirmed by laboratory analysis; in 1994, there were only five. It should be noted that there have been no confirmed cases of rabies in vaccinated animals. TDH recognizes only those vaccinations administered by a licensed veterinarian. The graph of positive laboratory tests shows the cyclical nature of rabies in Tennessee (Fig. 1). The length and magnitude of the cycle is primarily dependent upon the spread of rabies within the reservoir (skunk) population.

In cooperation with the Tennessee Veterinary Medical Association, TDH sponsors annual vaccination clinics. These clinics are designed to provide low cost and easy access for the vaccination of domestic dogs and cats. Vaccination clinics usually begin in March and continue through May statewide, although actual clinic dates will vary from county to county. All dogs 3 months old or older and all cats 6 months old or

FIGURE 1

TENNESSEE ANIMAL HEADS POSITIVE FOR RABIES DOMESTIC AND WILD ANIMALS



From the Tennessee Department of Health, Nashville. Mr. Rhoades is the Tennessee Rabies Control Coordinator, Division of General Environmental Health.

older must be vaccinated and a numbered tag given to the owner to attach to the animal's collar.

Preexposure vaccinations for animal handlers, including veterinarians, veterinarian aides, animal control employees, and others at high risk of exposure to potentially rabid animals are available under special arrangements with local or regional health departments throughout the state.

TDH has the responsibility to investigate animal bites as part of preventing exposure of humans to rabid animals. Any animal involved in biting someone is either destroyed or quarantined, depending upon its rabies vaccination status. Wild animals and stray dogs and cats are usually killed and the head sent for testing if at all possible. Vaccinated dogs and cats are quarantined for ten days as a precaution. A dog or cat able to transmit rabies will generally show neurologic symptoms within 24 to 48 hours of the bite. At the end of the ten days, TDH verifies the animal as healthy before allowing its release. TDH does not require that vaccinated quarantined animals be placed in shelters or kennels during the quarantine period, but the investigating officer or environmentalist must feel comfortable that the animal will not have contact with other animals or humans. Otherwise, quarantine in more secure facilities will be required at the owner's expense.

All local county health departments can provide assistance to medical providers in determining postexposure treatment. TDH maintains a continuing rabid animal surveillance, and can provide technical information to providers about the presence of active epizootic rabies in the area. In Tennessee, most confirmed rabies occur in skunks. The majority of rabies activity in the skunk population over the past several years has occurred in Middle and Upper East Tennessee. Bat rabies has been found sporadically throughout the state. Although raccoon rabies is present in Western North Carolina, TDH has found no raccoons positive for the rabies virus.

Inhibiting the exposure of humans to wild rabies populations through the control of rabies in domestic animals is the primary objective of the TDH Rabies Control Program. Control of rabies in domestic animals creates a buffer zone between humans and reservoir populations. Education of the public as to the impact of rabies enzootic areas, the importance of controlling stray and domestic animals, and having their animals vaccinated is the primary means to achieving that objective. ☐

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AIR FORCE

What's Wrong With This Picture?

J. KELLEY AVERY, M.D.

Case Report

A 40-year-old man came to the emergency department (ED) of a metropolitan hospital complaining of diarrhea, fever, cough, and chest tightness for three to four days. He had been treated for hypertension in the past but volunteered that he stopped taking the high blood pressure medication more than a year ago. Further history revealed that the man was a smoker. The tightness in the chest seemed to be aggravated by deep breathing. There had been no sweating.

The physical evaluation revealed temperature 97.8°F, pulse 62/min, respirations 18/min, and blood pressure 90/56 mm Hg. The patient appeared in no particular distress, the vital signs were stable, and the patient was well oriented. The respiratory system seemed normal. The breath sounds were described as distant and clear. The cardiovascular system was thought to be normal, with normal rate and rhythm. There were no infiltrates on the chest x-ray. WBC count was 13,000/cu mm. The diagnosis was "viral syndrome," and he was treated conservatively with fluids and an antihistamine and told to return in three to five days if the symptoms were no better. The blood pressure was rechecked prior to his leaving the ED and found to be 99/56 mm Hg after an IV fluid challenge.

At about 3:00 AM the following day the patient was found unresponsive by his wife and returned to the ED with CPR in progress. There was no response, and the patient was pronounced dead at the scene.

A lawsuit was filed charging the ED physician with failure to diagnose heart disease and failure to do proper workup in the face of symptoms suggesting heart trouble. There was trouble finding expert testimony, and when a physician was found who would testify for the defendant doctor it was thought that his testimony was weak. A six-figure settlement was reached on the courthouse steps.

Loss Prevention Comments

What were the symptoms suggesting heart trouble? Diarrhea, cough, low grade fever, and chest tightness!? There was the history of smoking and hypertension and that he stopped taking his blood pressure medicine about a year before this episode. His physical examination was not suggestive. The chest x-ray was normal, and the WBC count was 13,000/cu mm. He was virtually pain free when seen in the ED.

On the suggestive side for heart pathology was the history of smoking and hypertension. Still, so far, I don't believe the symptoms were suggestive enough to charge our doctor with medical malpractice.

What was the compelling reason that a cardiac workup should have been done? The history of smoking and high blood pressure are certainly risk factors, but were they enough for the expense of EKG, enzymes, etc.? The most tell-tale sign that should have been taken seriously was the fact that this hypertensive patient who had not had treatment for a year was no longer hypertensive. This patient had an admitting blood pressure of 90/56 mm Hg and even after a fluid challenge, his blood pressure was 99/56 mm Hg on discharge from the ED. This hypotension, with an only slightly suggestive evaluation, should have prompted the full cardiac workup before the patient was discharged from the ED. ☐

HELP FOR IMPAIRED PHYSICIANS

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Dr. Avery is chairman of the Loss Prevention Committee, State Volunteer Mutual Insurance Company, Brentwood.

The Case of the Month is taken from actual Tennessee closed claims. An attempt is made to fictionalize the material in order to make it less easy to identify. If you recognize your own case, please be assured that it is presented solely for the purpose of emphasizing the issues presented.

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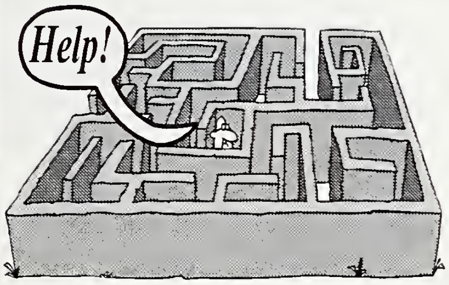

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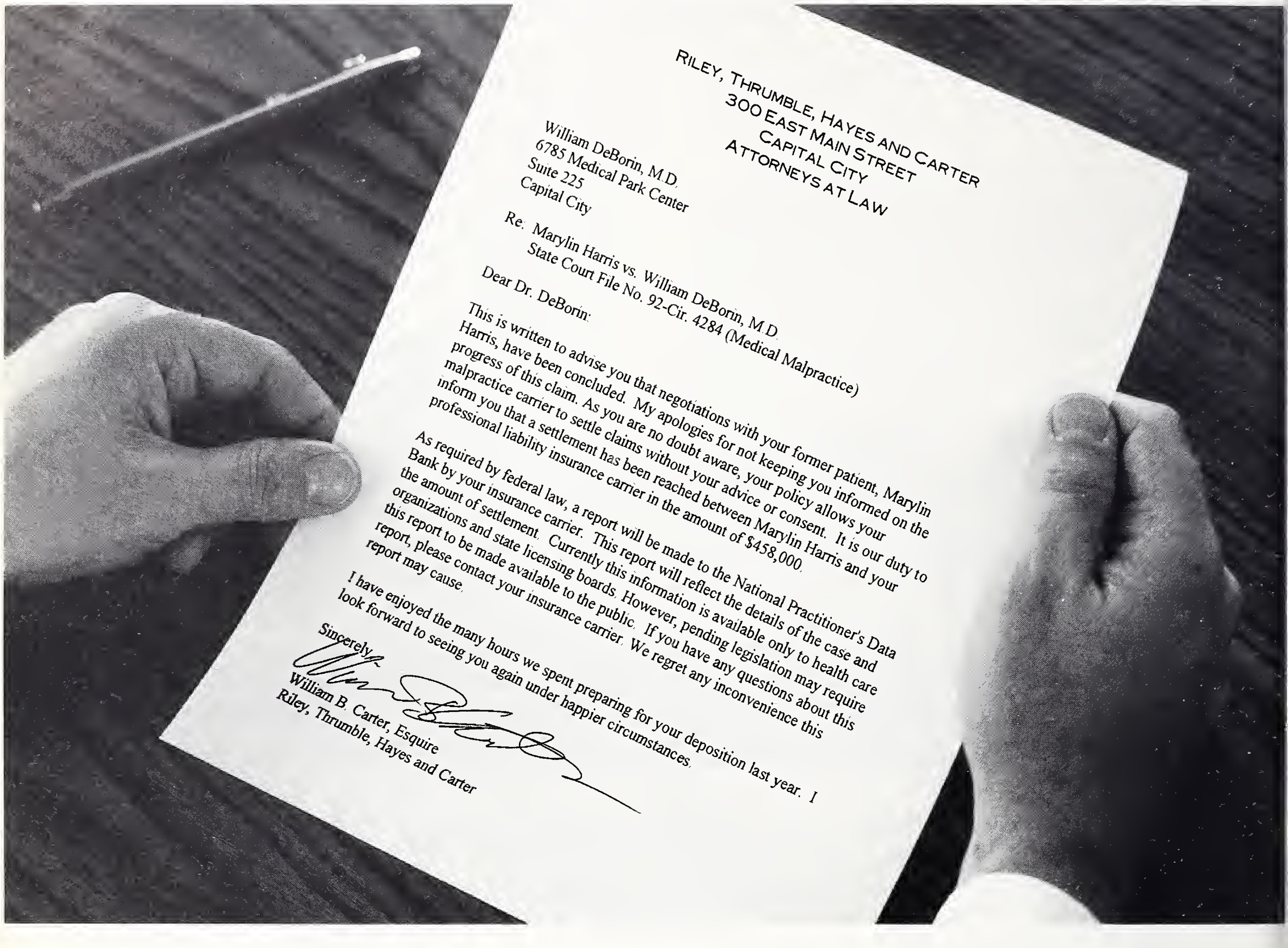

Riley, Thrumble, Hayes and Carter
300 East Main Street
Capital City
Attorneys at Law

William DeBorin, M.D.
6785 Medical Park Center
Suite 225
Capital City

Re: Marylin Harris vs. William DeBorin, M.D.
State Court File No. 92-Cir. 4284 (Medical Malpractice)

Dear Dr. DeBorin:

This is written to advise you that negotiations with your former patient, Marylin Harris, have been concluded. My apologies for not keeping you informed on the progress of this claim. As you are no doubt aware, your policy allows your malpractice carrier to settle claims without your advice or consent. It is our duty to inform you that a settlement has been reached between Marylin Harris and your professional liability insurance carrier in the amount of $458,000.

As required by federal law, a report will be made to the National Practitioner's Data Bank by your insurance carrier. This report will reflect the details of the case and the amount of settlement. Currently this information is available only to health care organizations and state licensing boards. However, pending legislation may require this report to be made available to the public. If you have any questions about this report, please contact your insurance carrier. We regret any inconvenience this report may cause.

I have enjoyed the many hours we spent preparing for your deposition last year. I look forward to seeing you again under happier circumstances.

Sincerely,

William B. Carter, Esquire
Riley, Thrumble, Hayes and Carter

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president's page

ROBERT E. BOWERS

Call Me Doctor

There is a tendency in America, as there always has been, to label everyone and everything, to categorize, and group together under one heading or name. Maybe it's our American tendency to hurry up, or maybe it is just a lazy way of trying to say a lot with few words. Whatever the reason, often the people being grouped together are insulted and demeaned by being designated by a one-word term.

As managed care began to develop in this country, physicians were asked to contract with insurance companies to provide health care services. These contractual relationships led to a generic term that categorized every aspect of the medical field from nurses to laboratory technicians. We all are now called "providers." We hear it at meetings with hospital administrators, managed care analysts, and insurance companies. We hear it also from government agencies and politicians.

Though medicine is distinguished as one of the four learned professions, including the ministry, teaching, and law, we are the only profession to be lumped together en masse with all other entities that work together with our profession to create the larger entity known as the medical community. We are now "providers." For example, we do not hear attorneys, jurists, court reporters, paralegals, and clerks lumped together under a common term such as "legal providers" that earmarks our legal system. To do so would be ludicrous, because there is no one term that could clarify the distinctions and recognize the contributions made by all these individuals that comprise the legal system. A clerk's role is not as significant as a judge's. Would these two separate positions want a single term to be designated for both of them? Surely not.

Physicians, certainly in one sense of the word, are providers of health care; we always have been. But first we are physicians. We are professionals who individually have spent many years furthering our education, studying, and perfecting our skills.

Physicians have been instrumental in creating the public health system in this country, as well as the teaching programs and the continuing research programs that influence the growth and changes in medicine.

Under the present system, everyone administering health care is given a number and placed in computers by these numbers. No distinction is made between the varying role played by these individuals. And now it would seem that the government together with big business aims to usurp the responsibilities and authority of our profession by labeling us as "providers."

It is the physician who has been the teacher, the innovator, the researcher, and the professional in the field of medicine. We took an oath to uphold certain ethical standards, as well as certain standards of patient care. We took that oath after years of concentrated study and devotion to our profession. I believe I speak for many of my colleagues when I say this *physician* believes himself demeaned by being referred to as a "provider."

Robert Bowers

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SEPTEMBER, 1995

editorials

Labor Day—More or Less

It is a conceit of mine, I trust not entirely without basis (you know: not even your best friends will tell you) that I occasionally gain a new reader or so. I have it on their own testimony that I do indeed have a following, though I wouldn't dare guess how large. Be that as it may, unless you are one of those new ones, you are doubtless familiar by now with my secondhand observation anent mice and men. Being one of the latter, or at least mostly, I have had a best laid plan of mine gang (tense??) aglae, and instead of giving you the scholarly dissertation on Labor Day that I had intended, I am reduced to merely tipping my hat to the holiday with something that is mostly fluff. Not that it deserves any better, but I thought to give it better, nonetheless.

One of my earliest and still most vivid memories is of riding up Lookout Mountain at night in the rain and fog—what we used to refer to, euphemistically, as "the clouds down"—after a Sousa's Band concert at Chattanooga's Memorial Auditorium. My father was driving with his head hanging out the window of the "Old Buick" (a 1921 model which actually wasn't so old then, but had maybe gotten to be before it was replaced about 1928 by a Reo Flying Cloud), peering through the blackness both to see oncoming traffic (everything at that late hour was fortunately going our way) and the side of the road for navigational purposes. Judged by present-day standards both automobile and road were primitive, and yet both were terrific advances viewed in retrospect. It hadn't been long since it was common knowledge that 30 miles an hour was the top speed possible for animal life. Anything above that would snatch the breath away, and one would die.

The automobile was a product of the industrial revolution that started in England near the end of the 17th century, notably with the invention of the steam engine. It was not long before one of them was fastened to a wagon, and the automobile was born, though it was not then a practical mode of transportation. That would have to wait for the invention of the internal combustion engine in the mid-19th century. Though there were 600,000 automobiles operating in the United States by 1913, mass production was made possible in that year by Henry Ford's invention of the conveyor belt. That may seem a long time ago to many, even most, of you, but that was only eight years before I was born, and about a dozen years before the episode recounted above.

What the United States was capable of industrially became apparent in the Second World War, when it was transformed in a matter of two or three years from a largely agrarian society with a few centers of industry to the major industrial nation in the world. It was done through virtual total mobilization of resources and total commitment of most of the citizenry.

In 1882 the Knights of Labor held a large parade in New York City in honor of the working man. Its second parade took place on the first Monday of September, 1884, and a resolution was passed to designate that day henceforth as Labor Day. After several states had made the day a legal holiday, the United States Congress in 1894 designated the first Monday in September a national holiday in perpetuity in honor of the working man.

I have a dead tree in my front yard that needs to be taken out. It is a big tree and it is close to the house. Felling it is no job for amateurs. I have been promised by each of the large local tree surgery companies that the tree would be taken out—right away. Twice an actual date has been set. One of the outfits told me, "Oh, yes; we just didn't get around to it. I promise it will be done before the Fourth of July." Two weeks later the tree is still standing.

That is unfortunately not an isolated incident, and I have it on reliable testimony that it is one not uniquely my own.

So much for Labor Day.

J.B.T.

Il Pensiero

I have to say at the outset that some of my readers are liable, even likely, to consider what I am about to say here a bit of male chauvinism. My only reply is that if they do, that's their problem, and not mine. I yield to no one in my regard for the female of our species, considering them as I do a wonderful adornment to the universe, not to mention a *sine qua non* for perpetuating our part of it. If you think my remarks chauvinistic, then you'll no doubt consider it chauvinistic too, or likely sexist, that I think women an adornment. If you think that, then tell me why it is that women spend so much time, effort, and money to make it so, fixing themselves up as they do, making the cosmetics industry one of Western Civilization's largest, and Wonderbra one of the hottest selling items of merchandise in the world. Women certainly are far superior to men as an adornment, for which they should be as grateful as the men are, or at least most of us, and not inferior in any way that I can think of, though they certainly are different biologically. And that's a fact. I would apologize for the digression, except that I never do. By now you must have grown used to it and would be shocked if I did.

Now, to get on with the show. A news item in this morning's so-called newspaper reported that 70,000 Christian men from all over these parts had assembled in the stadium in Atlanta, a part of an interdenominational band of Christians known as the Promise Keepers, who expect to assemble 700,000 in 13 such stadium gatherings during the coming year. As far as I could tell from reading their statement of purpose, which includes faithfulness to their wives and churches, responsibility to their children, and assertion of male leadership in the pursuit of national morality, attainment of their goals could do nothing but elevate the tone of society, which is certainly in sore need of elevating.

Anyway, the author of the article made the statement that the movement was perceived by some feminists (herself, maybe?) as being a religious cloak for a white suburban backlash against women's rights. I doubt it, though perhaps she is correct if she means feminism, which is not the same thing. Despite all the specious feministically inspired arguments for changes wrought in Holy Scripture and hymnals and so on to erase any evidence of it, and despite the ordination of women and proclamations by professional Christians, who have a vested interest, Christianity was and is, as was its root Judaism, patriarchal. There's no getting around it. I find a parallel in re that quarrel to the ridiculous contention of the rappers, heavy metal rockers, and others of their ilk that I could name but won't that every sound made by their musical instruments is music. It is music *because they say it is.*

I personally am pained by the tampering inflicted on our institutions for no better reason than whimsy. Take grammar. In drawing up my will, my attorney referred to the executor designate as "she," when a man had been clearly named. His response was, "It's generic, but if you wish I'll change it." It isn't, and I did, and so he did—to the masculine, which was not only grammatically correct but also correct in fact. Even though I likely make occasional grammatical slips, not always unintentionally, I take proper grammatical usage seriously. In the first place, it's my job as an editor to do so. Even though it's incorrect, it has become accepted in politically correct circles, with spillover into the population generally (a lot of whom don't know the difference anyway) to say such things as, for example, "Everyone take *their* seats." I hear and read it so much I even find myself saying it.

Yesterday as I was listening to Verdi's opera *Nabucco* I heard the commentator say, in his introduction to the third act, "We will hear the famous chorus *La* pensiera." (Emphasis emphatically his.) I thought it a shame that PBS, which was broadcasting the opera, would have such an untutored dolt as its commentator, since everyone who knows the work at all knows that the title of the chorus is "Il pensiero," pensiero being an Italian *masculine* noun meaning thought or idea. Then his emphasis hit me. He had changed the noun, with its pronoun, from the masculine to the feminine, despite its gender not being negotiable. It must have given any Italian listener heartburn. It was an inexcusable gaffe, and I was even more aghast at his temerity than I had been at his assumed blunder. Kiri Te Kanawa, in her rendition of Puccini's aria "O mio babbino caro," which means my dear little daddy, in the film *A Room With a View,* changed the wording to "O mia bambina cara," meaning my dear little girl. I've never ascribed feminism as a motive for that, but have thought instead that it was artistic license, changed to give it a more universal application and appeal than the rather limited one for which it was written. I still think that, but since paranoia has become rampant, it must make one wonder, mustn't it?

Backlash against women's rights among the Promise Keepers? Paranoid rubbish, likely. But then again, against the feminists, could be. And why not? As Patrick Henry said, "If this be treason, make the most of it."

J.B.T.

Only on the Potomac

It is not always easy to tell ineptitude from chicanery, since the latter, being less readily excused, is not infrequently deliberately disguised as the former. Both abound in Washington, and particularly in the current White House, and so it is nigh onto impossible to determine which imposition Henry Foster, M.D., fell victim to in his quest for the office of the Surgeon General of the United States. (Actually, "quest" is unlikely to be the proper term here, since I feel certain Dr. Foster was not doing much seeking, if any. The honor of a nomination by the White House, given its recent history, is one that puts me in mind of Abraham Lincoln's tale of the man who after he had been tarred and feathered observed as he was being ridden out of town on a rail that if it weren't for the honor of the thing he would really just as soon have walked.)

Those of us who have worked with Hank Foster know him to be a capable physician, an accomplished administrator, and an honorable man, and except that almost nothing is ever unanimous, his nomination had the approbation of both the Nashville Academy of Medicine, of which he is a member and in the work of which he has been a responsible participant, and the Board of Trustees of the TMA. It is to the everlasting credit of William Frist, M.D., that he recognized the attributes of the candidate, and at considerable political risk as a freshman senator cast the tie-breaking vote in committee to sustain Dr. Foster's nomination in the face of his party's opposition. I personally intend to remember that when election time rolls around, just as I intend to remember the vote against it by Dr. Foster's and my other senator.

Now, back to the observation that opened this piece. You may recall that the office of Surgeon General of the United States was vacated when the then sitting Surgeon General turned her attention to teenage pregnancy and sex, and made some recommendations that much of the Senate, and a lot of other people, including me, found unacceptable. The nomination of Dr. Foster, who like almost every gynecologist has performed an abortion now and then, automatically labeling him an abortionist in the eyes of the extreme right-to-life crowd, was looked upon by some as an "in your face" action by the White House. It is my own opinion, which for practical purposes is not verifiable, and doesn't count for much in any case, that Mr. Clinton, as indicated by numerous waffling actions, not to mention some actions abhorrent to members of his own party, is trying his level best to gain a measure of credibility across the aisle. It is therefore unlikely, I think, that he would deliberately engage in such an activity that is guaranteed to polarize the electorate and their elected representatives and alienate a large segment of the population at a time when he seems otherwise to be desperately seeking conciliation. I therefore think that, given the record of the administration for colossal ineptitude, that the administration was unable to envision that however the nomination turned out it would accomplish nothing more than such a polarization. It did just that.

In addition, any prejudices of mine aside, I find it intolerable to believe that the President of the United States would allow an upstanding citizen and outstanding physician to be pilloried for no better reason than rancor. I believe it simply never occurred to the administration, which includes the President's advisors, that no gynecologist, never mind his sterling qualities and stellar qualifications, is a viable candidate for anything in government, since his abortion record, no matter how trivial, is bound to be dredged up by one side or the other. I have also to say that I am equally disappointed in the Republican senators who foreswore themselves and sacrificed the candidate upon the altar of party politics.

I rest my case—for now—and will resist the urge to dwell on the obvious deleterious effects that this and other congressional cost-cutting actions will surely have on the efforts to stem the flood of teenage pregnancies. Some of Dr. Foster's detractors believe that his own program is not very effective, but that really is beside the point. Others believe that whole subject is not the business of the federal government, and some seem to believe it is not the business of anybody. I personally think it is the business of everybody, and that the teenagers need all the help they can get. But I guess that's none of my business, either, so I guess also that I have nothing more to say. Except that it has always been a source of wonderment to me that the people who are so opposed to abortions are the same ones who refuse to face the issue of teen pregnancies and the same ones who oppose taking steps to help prevent them.

And so I'll cease and desist, particularly since I have likely been preaching only to the choir. But be forewarned. If I'm still around in the fall of next year, which is closer to election time, and able to continue writing I'll be back to remind you about some things. It won't be along party lines, either, because often I can't tell the players or their teams one from the other without a program. I know only that Hank Foster got a bum rap, and that he got it from both sides.

Where else but on the Potomac?

J.B.T.

mail box

A Man Named Ned

(Sung to the tune of "The Beverly Hillbillies")

Come and listen to a story 'bout a man named Ned,
A Tennessee man, barely kept his people led.
Then one day he was thinking kind of crude,
And out of his mind came a way to delude.

Fool, that is. Not nice . . . high price.

Well, the next thing you know, ole Ned's not playing fair,
And Blue Cross said, "Ned, go with TennCare!"
They said, "Go to HCFA, that's the place you need to plea."
So he loaded up the fibs, and they went on TV.

With numbers, that is. People confused . . . abused.

Now the doctors always did their work for the poor,
And took care of the sick, the best they could, for sure.
But MCOs now tell them that they really do not care,
And they started using cramdown, and it's difficult to bear.

Crummy, that is. So little money . . . not funny.

So if you're looking for a way to help without frivolity,
Remember that our doctors try to work with quality.
They say, "Please let us help, we can put you in the know.
We can help you make it work, instead of playing foe."

Together, that is. To amend . . . THE END.

Arthur T. Wyker, M.D.
822 Broad St.
Kingsport, TN 37660

in memoriam

Joseph Anthony Buchignani III, age 55. Died July 22, 1995. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

Frank Kelley Jones, age 72. Died July 6, 1995. Graduate of University of Tennessee College of Medicine. Member of Bradley County Medical Society.

TMA Members Receive AMA Physician's Recognition Award

The following TMA members qualified for the AMA Physician's Recognition Award during July 1995. This list, supplied by the AMA, does not include members who reside in other states.

Physicians can receive the PRA certificate valid for one, two, or three years. For the one-year award, physicians report 50 hours of continuing medical education, including 20 hours of Category 1; for the two-year award, physicians report 100 hours of CME, including 40 hours of Category 1; for the three-year award, physicians report 150 hours of CME, 60 of which are Category 1. Each application for the PRA must also verify participation in Category 2 CME activities.

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new members

The *Journal* takes this opportunity to welcome these new members to the Tennesssee Medical Association.

KNOXVILLE ACADEMY OF MEDICINE
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WASHINGTON-UNICOI-JOHNSON COUNTY MEDICAL ASSOCIATION
Carlos A. Floresguerra, M.D., Johnson City

personal news

John K. Duckworth, M.D., Memphis, has been selected as the first recipient of the Major General Joe M. Blumberg Award of the College of American Pathologists for outstanding contributions to the laboratory accreditation Program of CAP.

announcements

CALENDAR OF MEETINGS

NATIONAL

Oct. 13-14	Contemporary Management of Common Respiratory Problems (during the Tall Stacks^{TM} Celebration)—Cincinnati
Oct. 13-18	American College of Gastroenterology—Hilton, New York
Oct. 14-18	American Academy of Pediatrics—Marriott, San Francisco
Oct. 14-19	Congress of Neurological Surgeons—Hilton, San Francisco
Oct. 16-22	American Academy of Psychiatry and the Law—Westin, Seattle
Oct. 18-22	American Society of Internal Medicine—Renaissance, Washington, D.C.
Oct. 19-21	American Academy of Clinical Psychiatrists—Westgate, San Diego
Oct. 21-25	American Society for Anesthesiologists—Marriott, Atlanta
Oct. 22-26	American College of Rheumatology—Marriott Moscone, San Francisco
Oct. 22-27	American College of Surgeons—Hilton Towers Riverside, New Orleans
Oct. 23-26	Intrastate Postgraduate Medical Association of North America—Hyatt, San Francisco
Oct. 29-Nov. 2	American College of Chest Physicians—Hilton and Towers, New York
Oct. 31-Nov. 5	American Medical Women's Association—Westin, Seattle
Nov. 1-5	American Academy of Neurological Surgery—Ventana Canyon, Tucson
Nov. 7-12	American Society of Cytology—Waldorf-Astoria, New York
Nov. 9-11	Southern Thoracic Surgical Association—Hyatt, San Antonio
Nov. 9-12	Academy of Psychosomatic Medicine—Princess Marquis, Palm Springs, Cal.
Nov. 11-15	American College of Allergy and Immunology—Loews Anatole, Dallas
Nov. 15-19	Gerontological Society of America—Westin Bonaventure, Los Angeles
Nov. 15-19	Southern Medical Association—Hyatt, San Antonio
Nov. 16-18	American Society of Bariatric Physicians—Sheraton Harbor Island, San Diego
Nov. 16-20	American Academy of Physical Medicine and Rehabilitation—Marriott World Center, Orlando

STATE

Oct. 7	Tennessee Chapter of the American College of Cardiology, Annual Meeting—Airport Marriott, Nashville
Oct. 24-27	Tennessee Academy of Family Physicians, Annual Scientific Assembly—Convention Center, Gatlinburg
Nov. 9-11	Tennessee Society of Internal Medicine and Tennessee Chapter, American College of Physicians—Park Vista Hotel, Gatlinburg

Actions of the Tennessee State Board of Medical Examiners

June, 1995

Name: William Miles, M.D. (Alexandria, LA)
Violation: Disciplinary action in Virginia and Louisiana for felony conviction.
Action: License suspended for one year; Board appearance required for reinstatement; license to be placed on an additional five years probation if reinstated.

Name: Aubrey Richards, M.D. (Bolivar)
Violation: Engaged in the practice of medicine when mentally and/or physicallly unsafe to do so.
Action: License renewal application denied.

Name: Gilbert Sainz, M.D. (San Diego)
Violation: Unprofessional conduct.
Action: Per agreed order, license voluntarily retired.

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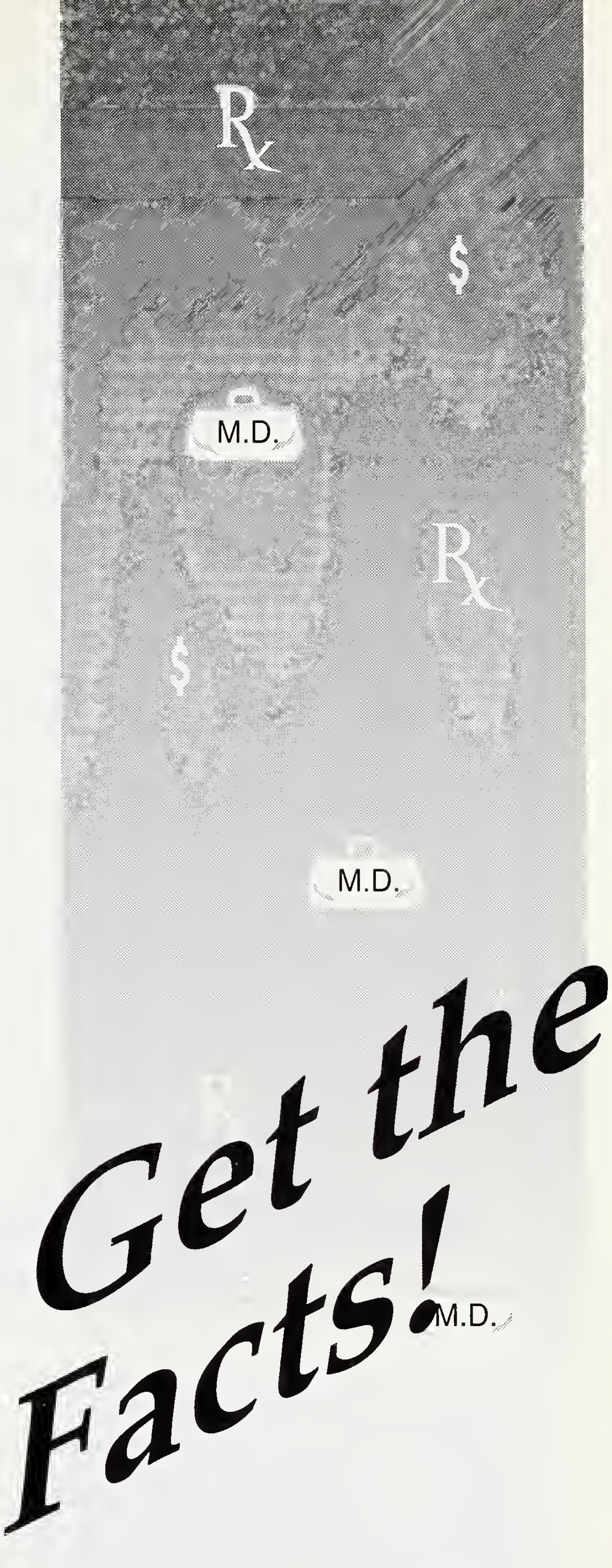

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TMA Alliance Report

"Living With the Enemy" Journeys Across the State

Last year, the Tennessee Medical Association established a Domestic Violence Awareness Program. Through this program, the TMA hopes to raise public comprehension of the problems of domestic violence, educate physicians about the issue, and make support for all concerned more readily available. Medical alliances across the state have joined the TMA in its campaign against family violence.

Donna Ferrato's 50-piece photo exhibit, "Living with the Enemy," will begin its tour across the state in September. This series of black and white photographs gives a photographic narrative of domestic violence. Ferrato explains that with her camera she has "tried to throw a light on what was America's best kept secret—violence in the home."

The exhibit will begin its tour in Knoxville, where it will be open to the public from September 6-10. The exhibit will then travel to Johnson City, where it can be viewed from September 13-17. "Living with the Enemy" will be on display in Chattanooga from September 20-24. The photo exhibit arrives in Jackson in October, where it will open on October 4-7. The final stop for the exhibit will be in Memphis, where it will be open to the public from the October 11-15.

Each city has planned receptions and other activities to coincide with the exhibit tour. Funds to be used in the fight against domestic violence will be raised at these receptions. The exhibit will not return to Nashville, since it was there at the TMA annual meeting in April, but the Nashville alliance continues to work on their domestic violence campaign by sponsoring a walk at the end of October in conjunction with the YWCA and an organization called P.E.A.C.E.

Other alliances across the state are also working on fund-raisers for their domestic violence programs. Much hard work has gone into the upcoming tour of this photo exhibit, but support is needed from each of you. With statewide support, the TMA and TMAA will be successful in educating Tennessee citizens and physicians about domestic violence and raising funds for local shelters. ❑

—Connie Stohler, Health Promotions Chairman

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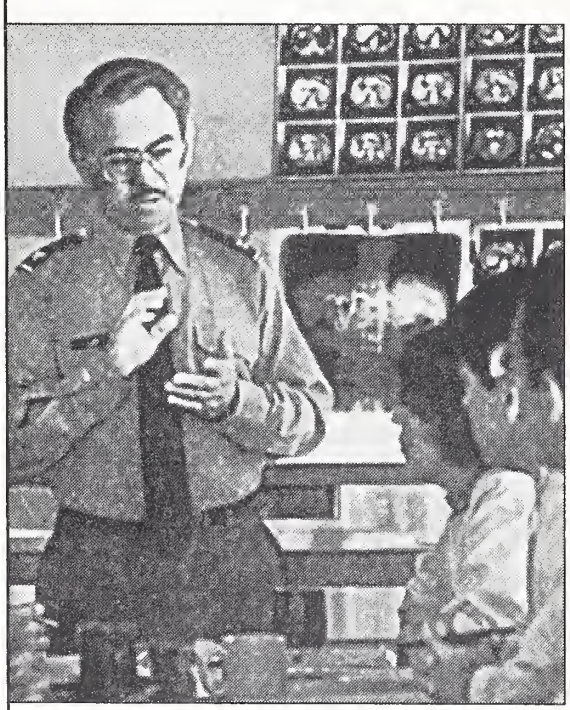

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TMA is accredited by the Accreditation Council for Continuing Medical Education (ACCME) as a sponsor of continuing medical education for physicians. Nonaccredited organizations may request TMA's joint sponsorship of CME activities. As an accredited sponsor, TMA is authorized to designate certain CME activities for credit in the AMA Physician's Recognition Award Program.

TMA is recognized by ACCME as the accreditor of institutions in Tennessee conducting intrastate CME programs. Any organization conducting such programs may apply to TMA for accreditation as a sponsor of CME.

Inquiries regarding TMA joint sponsorship of CME or application for accreditation as a sponsor of CME should be made in writing to: Director of Continuing Medical Education, Tennessee Medical Association, PO Box 120909, Nashville, TN 37212-0909.

IMPORTANT NOTICE

Published in this section are many educational opportunities which come to our attention which might be of interest to our membership. As some of these are very long, full year schedules, and others are detailed descriptions of courses, in order to conserve space, most of them will be published in only one issue of the Journal.

IN TENNESSEE

VANDERBILT UNIVERSITY MEDICAL CENTER

Clinical Training Program

The doctor and faculty plan an individualized program to meet the physician's practice needs. This may include contact with patients, participation in clinical rounds and diagnostic procedures, interaction with faculty and housestaff, access to the Medical Center Library and other learning resources, and other benefits of a preceptorship. AMA/PRA Category 1 credit is provided for each hour of participation. Physicians *must* be licensed and be in active practice with evidence of liability coverage.

Ongoing Rounds and Conferences

Arrangements can be made for licensed practicing physicians to attend for credit.

Special Conferences/Seminars

Detailed brochures for the following courses are available. In some cases, registration numbers are limited.

Oct. 6-7	Substance Abuse Seminar
Oct. 27-28	Laryngeal Video Endostroboscopy
Nov. 2-4	Lasers in Otolaryngology-Head and Neck Surgery
Nov. 9-11	Vanderbilt Neonatology and AAP District IV Spring Meeting—Asheville, N.C.
Dec. 1-2	21st Annual High Risk Obstetrics Seminar
Jan. 28-Feb. 3	Practical Aspects of Diagnostic Radiology/ Medical Imaging—Snowmass Village, Colo.

For information contact Division of CME, Vanderbilt University School of Medicine, D-8211 MCN, Nashville, TN 37232, Tel. (615) 322-4030.

MEHARRY MEDICAL COLLEGE

Extended Continuing Education Program

Arrangements have been made with many services and departments in the medical school to allow practicing physicians to participate in the service's activities for a period of one day to one week. This program provides an opportunity for physicians to study in depth for a specified period. The schedule of activities is individualized in response to the physician's request by the participating department. The experience includes conferences, ward rounds, audiovisual materials and contact with patients, residents and faculty.

Fee: $75 per day or $275 per five-day week of educational experience including lunch and parking at Meharry Medical College. *Credit:* AMA Category 1 of the Physician's Recognition Award, AAFP, and Continuing Education Units from Meharry Medical College. *Application:* For information contact Henry A. Moses, Ph.D., Director of Continuing Education, Meharry Medical College, 1005 D.B. Todd Blvd., Nashville, TN 37208, Tel. (615) 327-6235.

UNIVERSITY OF TENNESSEE

Continuing Education Schedule

Memphis

Oct. 5-7	Alumni Medicine Weekend/Horner DVP
Oct. 6-7	3rd Annual Ultrasound Conference
Oct. 14	Symposium on Cardiovascular Disease in Women
Oct. 27-28	Gynecological Surgery Seminar
Nov. 2-4	Brain Injury Conference
Nov. 6-10	Advances in Medicine—Maui, Hawaii
Jan. 12-13	High Risk Perinatal Conference
Feb. 17-27	Clinical Medicine—Maui, Hawaii
Feb. 19-22	Update in Obstetrics and Gynecology—Grand Cayman Island
Feb. 24-25	Radiology Conference
March 11-15	Ob/Gyn Ski—Snowmass, Colo.
March 16-22	29th Annual Review Course for the Family Physician
March 26-31	Symposium on Critical Care and Emergency Medicine—Hot Springs, Ark.
May 8-12	Perinatal Social Work

Knoxville

Oct. 25-27	Perinatal Update '95—Gatlinburg
Oct. 30-Nov. 1	14th Annual Smoky Mountains Seminar in Obstetrics and Gynecology—Gatlinburg

Chattanooga

Oct. 19-20	Care of the Aging Patient
Nov. 30-Dec. 1	Internal Medicine Update
Feb. 18-23	Clinical Medicine—Maui, Hawaii
March 28-29	Pediatrics

For information contact Mrs. Jean Taylor Bryan, Office of CME, University of Tennessee, 800 Madison Ave., Memphis, TN 38163, Tel. (901) 448-5547.

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Integrating an Acute Geriatric Teaching Service With a General Medicine Program in a University Hospital

JAMES S. POWERS, M.D. and SARAH J. WHITE, R.N., C.GNP

Introduction

The need to combine general medical education with geriatric education reaches across all disciplines. Medical care is increasingly complex and must be integrated with concern for the financial, administrative, and multidisciplinary care needs of increasingly sick patients in the hospital setting. This includes a growing portion of elderly hospital admissions, currently approximately 30% of the medical service at our university hospital. A geriatric model incorporating input from nursing and other disciplines, emphasis on discharge needs, and identification of broader health care issues is an appropriate addition to the education of health care providers in the care of complex, hospitalized elderly patients (Table 1).

The acute non-teaching senior care service developed over the preceding five years.[1] Various models of geriatric nursing education, staff support, geriatrics consultation, and geriatric team building exercises culminated in a permanent 7-10 patient acute senior care service that formed the basis of the integrated teaching model. This interdisciplinary service was managed by a faculty geriatrician and a geriatric nurse practitioner. Increased visibility and credibility of the geriatric service members and their expertise in solving difficult management and disposition problems was widely recognized by the university community. The geriatric team expanded its scope to adopt a teaching housestaff service on the acute medical ward, comprised of 30% to 50% elderly patients and approximately 20% other complicated multidisciplinary patients. Team members were identified as successful role models who could positively influence other health care professionals.

TABLE 1

VANDERBILT UNIVERSITY HOSPITAL MEDICINE INPATIENT SERVICE MULTIDISCIPLINARY TEACHING GOALS

Educational Goals
- To develop experience and efficiency in the care of acute medical inpatients of all ages
- To appreciate the place of acute care in the continuum of health services
- To participate in the multidisciplinary approach to the care of the patient

Methods
- Responsibility for direct medical care of hospitalized patients
- Systems approach to the patient's problems as an extension of the problem oriented method
- Daily multidisciplinary teaching/work rounds

From the Department of Medicine and Department of Patient Care Services, Vanderbilt University Medical Center, Nashville.

Reprint requests to Department of Medicine, Vanderbilt University Medical Center, 2558 The Vanderbilt Clinic, Nashville, TN 37232 (Dr. Powers).

Structure

The attending faculty geriatrician and geriatric nurse practitioner/case manager worked closely with this housestaff group, taking admissions on rotation, and performing teaching, case management, and attending physician functions. Other geriatric team members (social worker, dietitian, clinical pharmacist, physical and occupational therapists, medical ethicist, clinical psychologist) were involved on a consultative basis, teaching on preselected patients.

Process

Teaching rounds were held six days weekly and were limited to one hour. A combination of teaching and work rounds (patient management) was employed.

All new patients were briefly presented. More detailed information was provided for patients under the direct care of the attending physician. Patient problems were identified and discussed in the domains of physical, mental health, functional abilities, ethical, and social concerns. Task assignments were given to different team members.

Selected patients were presented for discussion with invited members of the expanded geriatric team on non-post-call days. Rounds included conference presentations, bedside evaluations, didactic sessions, and provision of written instructional material.

The attending geriatrician and geriatric nurse practitioner demonstrated a collaborative practice model, encouraged staff nurse participation in rounds, participated in the weekly discharge planning conference, and developed geriatric-focused in-services for staff on the unit. They also implemented additional patient care rounds for the non-licensed care providers designed to focus on the specialized needs of the older medical patients and promote a learning environment for all staff.

Outcomes

Housestaff and medical acceptance of the collaborative practice and multidisciplinary teaching model was high. The rotation was eagerly sought by housestaff. There was an observed increase in discussions of discharge, functional, and ethical issues during rounds. These problems were also more frequently included in the write-ups of housestaff and students. The geriatric nurse was appropriately consulted early in the hospital stay by house officers from all medical services concerning disposition and functional problems as well as wound care concerns. These consultations frequently resulted in formal interdisciplinary geriatric service consultations.

Housestaff and medical students expressed a greater interest in primary and geriatric care at the completion of the rotation. The social workers received daily communications from case managers with improved cooperation from house officers regarding disposition and other social concerns. There was a reduction in length of stay of one day with the addition of the nurse case managers to the teaching teams. The nurse manager of the floor rounded periodically with the teaching teams, and staff nurses felt more comfortable during rounds contributing toward management decisions regarding patients.

Cost Factors

The reorganization of the teaching services and the influence of geriatric teaching were performed with a minimum of personnel costs. Improved communication between disciplines and the addition of a geriatric influence for a teaching housestaff group remain the major interventions. The geriatric nurse/case manager justified cost by decreasing the average length of stay. Other hospital personnel were involved when appropriate as part of their normal hospital duties. All health professionals maintained their primary appointment within individual disciplines and departments. The attending geriatrician and geriatric nurse practitioner devoted approximately 25% to 50% of their time respectively to this effort, constituting a major teaching commitment. Other teaching teams on the medical service functioned with rotating attending physicians representing varied specialties with no formal multidisciplinary teaching exercises.

Discussion

The competing needs of different specialties and the crowded curriculum of medical students and housestaff require a rethinking in the design of training programs in internal medicine.[2] All internists will experience an increase in average age in their populations; few, however, will choose to see geriatric patients exclusively. Indeed, most elderly patients will be cared for by non-geriatric specialists. It therefore seems proper to include geriatric training within the scope of general internal medicine. This example of an efficient, collaborative, multidisciplinary team approach to the multifaceted problems of elderly acute medical inpatients has a potential to influence future practice styles of physicians-in-training.

Although it is too early to know if career paths will be influenced, including a greater orientation to primary care or geriatrics, our previous teaching experiences with a nursing home,[3] intermediate care service,[4] and interdisciplinary acute geriatric service suggest that these programs are well accepted, even on busy teaching services. Further, the geriatric model served as an important element in the support of the nursing service on the medical floor. The geriatric team members, in fact, assisted with training many of the new nursing assistants on the medicine floor and the case managers affiliated with the other teaching teams.

Medical student and housestaff education is frequently specialty oriented, a factor thought by many to be influential in shaping attitudes and career paths toward specialty medicine and critical care. Additionally, the training of the physician emphasizes a rather rigid view of patient care that is time limited, disease focused, and objective.[5] The provision of primary care and geriatric care, however, is often interdisciplinary, comprehensive, and chronic, with management decisions greatly influenced by experience, attitudes, and expectations. This type of medical care can best be taught by example and experience.[6]

Shortages of physicians and nurses with national geriatric expertise suggest that integrated models of geriatric and medical education on general medical wards may constitute appropriate educational models for geriatric education in American university hospitals for the foreseeable future. ❑

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HELP FOR IMPAIRED PHYSICIANS

The Tennessee Medical Foundation Impaired Physician Peer Review Committee assists doctors who are suffering from the disease of chemical dependence, or mental or emotional illness, or both, including certain behaviors problematic for physicians. The thrust of the program is rehabilitative, not punitive. The Committee is composed of physicians who have special expertise in these areas, some from personal experience. Effective treatment for these iilnesses is achieved most easily when the disease or illness is detected early. The Committee urges family, friends, and associates to avoid misguided sympathy which enables a physician's impaired condition to deteriorate.

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Call the TMF Impaired Physician Program at (615) 385-3319; outside Nashville call collect. Telephone message service available around the clock.

Telephone Access to a University HIV/AIDS Clinic

CRAIG S. DORKO, M.D.; ROBERT E. MORRISON, M.D.; GAI STEEL, R.N.;
KRISTOPHER L. ARHEART, Ed.D.; and SUSIE J. SARGENT, M.D.

Introduction

The recent support in the United States for health care reform has caused physicians, hospitals, and other medical organizations to look at alternative ways to practice medicine. Major goals of most health care organizations are to provide safe, efficient, and cost-effective medical care. One way in which quality health care can be facilitated is to formally organize and structure a system of telephone medicine as an adjunct to other clinical activities.

To date very few analyses have been carried out regarding telephone medicine.[1-5] With the growth and importance of the worldwide telecommunications market, new studies are necessary to determine ways in which physicians might best use the telephone to care for patients and their families. Our research was performed in an attempt to define the problems encountered during routine patient-related telephone calls.

Methods

From July 3 to 12, 1993, we surveyed 109 consecutive telephone calls made to our HIV/AIDS clinic. A prospective survey was completed by a registered nurse experienced in the care of outpatients with HIV/AIDS. Data were collected on weekdays between the hours of 7 AM and 5 PM. The times of each call were recorded; and the identity and demographic information, including age, sex, and race, of each caller were ascertained. An assessment was made by the nurse as to the specific reasons for each call, this information was transferred to a survey form, and the nurse tabulated the number and type of actions taken per call. We utilized SAS (SAS Institute, Inc., Cary, NC) descriptive statistics to analyze the context of the calls.

Description of the Clinic

The clinic staff included eight physicians, four registered nurses, and one nurse practitioner, representing general internal medicine and infectious diseases. Most of the practices in the clinic are part-time, comprising one or two half-day blocks per week, with general internists or infectious disease specialists available at all times during regular hours. The clinic serves predominantly economically disadvantaged patients, with more than 79% of patients using Medicaid or self-pay. Seventy-nine percent are men, and 21% are women. They make more than 3,200 patient visits per year.

Results

A total of 109 calls were made to the clinic. They include all calls that involved care of specific patients. Of the 109 calls, 90 (83%) were made between 9 AM and 3 PM, with a fairly even distribution over that period. Only seven calls (6%) were made after 3 PM.

The mean age of patients in the survey was 34 years, which is the same as the mean age of all the patients in the HIV/AIDS clinic. Ninety-six of the callers (88%) were men; 55 were white (50%), and 54 were black (50%). The racial make-up of the entire clinic is 35% white and 65% black. Demographic information is shown in Fig. 1.

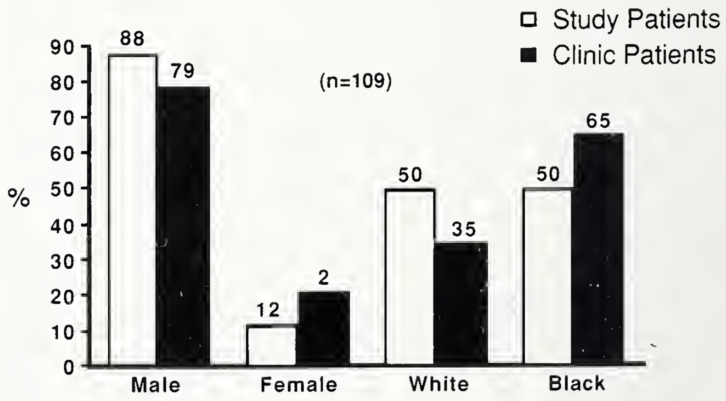

Figure 1. Demographic information.

From the Departments of Medicine (Drs. Dorko, Morrison, Sargent), Biostatistics and Epidemiology (Dr. Arheart), University of Tennessee, Memphis, and the Adult Special Care Clinic, Regional Medical Center at Memphis (Ms. Steel and Dr. Sargent).

Portions of this work were presented at the Southern Society for General Internal Medicine Meeting, February 4-5, 1994, New Orleans, LA.

Reprint requests to Division of General Internal Medicine, 842 Jefferson Avenue, Room A607, Memphis, TN 38103 (Dr. Morrison).

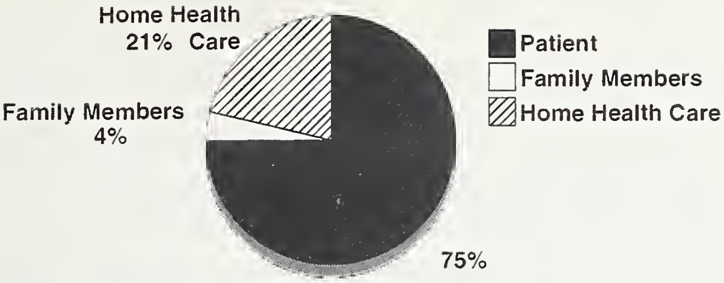

Figure 2. Call initiator.

Eighty-two calls (75%) were initiated by the patient, and 23 calls (21%) by home health care workers, which included nurses and social workers (Fig. 2). Family members made four calls (4%). Ninety-two patients (84%) called for just one reason, 12 patients (11%) called for two reasons, and five patients (5%) called for three reasons.

The reasons for calls were medication inquiries (51%), laboratory results (18%), symptoms (17%), social services (8%), override appointments (3%), research protocols (1%), and other (2%) (Fig. 3). Medication inquiries were for refills (71%), new/change prescription (24%), and refusal to prescribe (5%). Of the medications filled or refilled, the total number of prescriptions written was 56, and these were further subdivided into major drug categories (Table 1). The most common drugs prescribed were antiretrovirals (n=10, 18%), antibiotics (n=9, 16%), and antivirals (n=9, 16%).

The other most frequent reason for calling was for the patient to describe some type of symptom (n=37). New symptoms were described 65% of the time and recurrence of old symptoms 33% of the time. The most frequently reported symptoms were related to upper respiratory infections (22%) and pain (18%). Symptom data are presented in Table 2.

With each call, one or more actions were taken. One action was taken in 59%, two in 27%, three in 11%, and four in 3%. These included physician consultation, ancillary services, prescription inquiries, orders initiated, and/or patients sent to the emergency department. By far the most frequent action taken was physician consultation (46%) requiring the physician to return the patient's call 30% of the time.

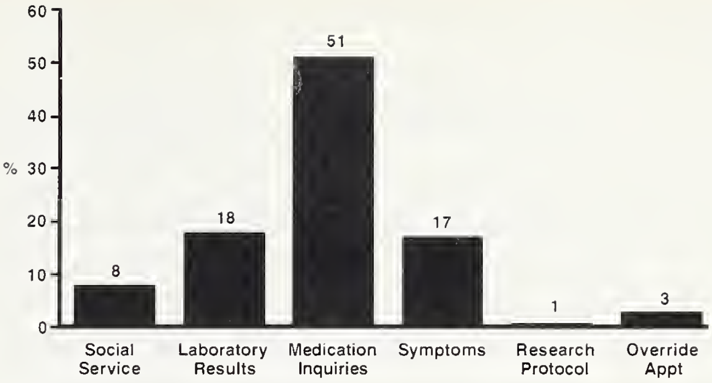

Figure 3. Reasons for calling.

Discussion

Telephone access to a patient's provider of primary care is an essential part of clinical practice. After residency training, most physicians learn how to deal with patients over the telephone by trial and error. We attempted to elucidate the most frequently encountered problems and look at the actions taken by nurses and physicians working in the clinic. Outcomes of the actions were not measured, so that the success or failure rates of the efforts are not known, but our perception is that telephone nursing and telephone medicine is probably very effective. We found that nurses trained in the care of HIV/AIDS patients successfully handled a large percentage of calls to our clinic, most of which concerned medication prescriptions.

Our study showed that most calls are initiated by the patient and that the vast majority of calls are for one expressed reason. Therefore, it is very conceivable that well-constructed protocols could be developed to efficiently handle each of these specific reasons. As an example from our study, medication

TABLE 1

MEDICATIONS FILLED OR REFILLED (n=56)

Antiretrovirals	10	(18%)
Antibiotics	9	(16%)
Antivirals	9	(16%)
Antifungals	4	(7%)
Antidepressants	4	(7%)
Narcotics	3	(5%)
NSAIDs	3	(5%)
Antiprotozoals	2	(4%)
Antiemetics	1	(2%)
Tranquilizers	1	(2%)
Other	10	(18%)

TABLE 2

SYMPTOMS (n=33)

Upper respiratory infections		9 (27%)
Pain		7 (21%)
Rash/sores		4 (12%)
Nausea/vomiting		2 (6%)
Dizziness		2 (6%)
Dysuria		2 (6%)
Weakness		2 (6%)
Other		5 (16%)
Insomnia	1	
Anxiety	1	
Epistaxis	1	
Change in vision	1	
Trauma	1	

inquiries were the most frequent reason for calling, and 71% of those inquiries concerned refills. Since 93%, or the majority, were for non-controlled substances, a system could be established that would facilitate the refilling of prescriptions and address side-effect inquiries, bypassing the need for the physician to directly call the pharmacy.

Although telephone medicine is an important element of access to a practice, to date very few studies have addressed the utility of the telephone in practice and how physicians learn to handle problems effectively over the telephone.[3,4,6,7] Well-trained nurses can be an asset to a clinical practice, and protocols should be developed to aid in quality medical decision making. Also, soundly constructed protocols save a physician's valuable time by requiring less frequent consultations from the nursing staff.[1] With effective use of the telephone, we may be able to decrease the frequency with which patients are required to visit the clinic, conserving valuable physician time.[4]

Further studies are needed to enable the development of treatment protocols to optimize nurse utilization and to decrease physician consultation time. Also, such studies should address action outcomes and their cost. Telephone medicine should be incorporated into the medical school and housestaff curriculum for physicians in training. Using the telephone in this way can help reduce medical costs and may also improve the quality and efficiency of health care. ❑

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April 1996

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8	9	10	**11** **TMA 161ST ANNUAL MEETING** **Hyatt Regency Hotel—Knoxville**	**12**	**13**	**14**
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29	30	NOTES				

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Prehospital Blunt Traumatic Arrest: Survival and Analysis

JEFFREY C. LAWHON, M.D.; LEWIS B. SOMBERG, M.D.; and DONALD E. BARKER, M.D

Introduction

The management of arrest due to blunt trauma remains controversial in the subgroup with prehospital arrest. With the advent of emergency medical service (EMS) systems, level I trauma centers, and Rotorcraft, these patients are arriving in increasing numbers at an earlier stage in the arrest process, and being subjected to aggressive resuscitative efforts.[1,2] Some believe time is a key factor in survival, and advocate aggressive resuscitation efforts upon arrival, whereas others scrutinize survival statistics and believe that the long-term outcome from arrest due to blunt trauma warrants a more conservative approach to resuscitation.[3,4] Little has been written specifically about this subgroup of arrest patients, since there is much debate as to what is too aggressive, what is not aggressive enough, what is the cost-effectiveness of surviving as a nonfunctional individual, and whether or not the outcome warrants the effort.

Following is a retrospective review of blunt traumatic arrest over a four-year period at a level I pediatric and adult trauma center that has a large percentage of blunt trauma admissions. The goal was to determine outcome, positive prognostic factors, cost-effectiveness, and when to aggressively resuscitate or to terminate CPR in the blunt traumatic arrest victim having had prehospital initiation of CPR.

Materials and Methods

The prehospital records, hospital records, and institutional finance records from April 1990 through August 1993 were retrospectively reviewed. Blunt trauma patients were identified and a chart review was conducted to identify those with prehospital initiation of CPR. The criteria for inclusion in this study were trauma by blunt mechanism, CPR initiation at some point between incident and admission to the level I trauma resuscitation room, and evaluation by the trauma team on admission. During the study period, 47 patients were found who fit these criteria. Patients who had CPR initiated at an outside facility were included, whereas patients who arrested in our trauma resuscitation room were not. There were no exclusions for age, which ranged from 8 months to 87 years. The time of incident, initiation of CPR, termination of CPR, and procedures prior to arrival at the level I trauma center were obtained through the EMS records, helicopter flight records, and documents copied from outside facilities. The remaining were obtained from the hospital trauma registry, medical records, and financial departments.

The data analyzed for correlation with CPR survival, long-term survival, and neurologic outcome included age, gender, mechanism of injury, signs of life at the scene, signs of life on admission, cardiac rhythm on admission, number of body regions injured, revised trauma scores (RTS), hematocrit on admission, blood pH on admission, length of time in CPR prior to admission, and the number of advanced procedures performed prior to and after admission. Long-term survival was defined as survival to discharge regardless of neurologic outcome. Signs of life were defined as pulse, blood pressure, spontaneous respirations, reactive pupils, movement, or communication. Body regions were arbitrarily denoted as head, neck, thorax, abdomen, and extremities. The number of body regions injured was defined grossly by the trauma team, since all trauma deaths in our state are not required to undergo formal autopsy. The RTS physiologically assesses injury severity and probability of survival based on respiratory rate, systolic blood pressure, and the Glasgow Coma Scale that has a score from 0 to 12.

Results

A blood pressure above 80 systolic was restored in 16 (34%) of the 47 patients in this study. Nine of these 16 had regained vital signs prior to arrival through the resuscitative efforts of the prehospital personnel. Another seven patients were resuscitated by the trauma team through advanced cardiac life support (ACLS) and advanced trauma life support (ATLS) protocols, with CPR lasting 2 to 60 minutes after arrival. Of the 16 initial CPR survivors, eight died within 24 hours,

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including four operating room deaths and four brain deaths, of which two became donors. The length of time in CPR for these eight early deaths was 5 to 77 minutes, with an average of 36 minutes. Another four patients died at hospital days 5, 7, 7, and 9 of multisystem organ failure due to disseminated intravascular coagulation in one and brain death in the other three. CPR in these four patients lasted from 3 to 72 minutes, with an average of 28 minutes. Four patients survived longer than 30 days, two being discharged at hospital days 43 and 54; the other two died on hospital days 65 and 87 of multisystem organ failure due in one to sepsis and respiratory failure in the other. The two patients surviving to discharge were in CPR 5 and 17 minutes respectively. Both had vital signs restored by the EMS prior to arrival. The final two patients surviving longer than 30 days had CPR times of 13 and 30 minutes. Patients who never regained a pulse and blood pressure were in CPR 10 to 145 minutes, with and average of 38 minutes. All 16 initial arrest survivors, including those resuscitated in the trauma room, had EKG activity on admission resembling normal cardiac rhythms (normal sinus rhythm, sinus bradycardia, and sinus tachycardia) as opposed to only 3 of 31 of those who did not survive arrest. None of the patients regained neurologic function prior to death, and only one of the discharged survivors regained enough function to speak in limited one-word sentences and walk with assistance that has not changed in three years of follow-up.

The age in the study group ranged from 8 months to 87 years, with a distribution of 34 male and 13 female patients. Of the 16 initial arrest survivors ten were male and six female of ages from 8 months to 75 years. The patients surviving to discharge were a 5-year-old boy who regained minimal neurologic function as mentioned earlier, and a 14-month-old girl who never regained neurologic function, requiring a tracheostomy for airway control, gastrostomy tube for nutritional support, and total care. The long-term survival rate of 4.3% includes the two patients who were discharged, but of these two patients only one is minimally functional, resulting in what may or may not be called a functional survival rate of 2.1%.

The majority of patients (37) were victims of motor vehicle accidents (MVA). Other causes of injury included one fall, one four-wheeler accident, one go-cart accident, one aircraft propeller accident, one logging accident, and two motorcycle accidents; the other three were pedestrians struck by automobiles. All patients initially surviving arrest were from MVA except for one motorcycle accident. The average number of body regions injured in the non-MVA group was >4.0 as compared to 2.7 in the MVA group. The initial arrest survivors scored an average of 2.7 body regions injured, compared to 3.1 scored by the nonsurviving group. Long-term survivors were noted to have the least number of body regions injured. The injuries in this group included a head injury in the minimally functional 5-year-old boy, and a head and neck injury in the nonfunctional 14-month-old girl.

Signs of life at the scene were present in 8 (50%) of the initial arrest survivors and 22 (70%) of the 31 nonsurvivors. There were no signs of life on admission for the nonsurvivors as opposed to 9 (56.3%) of the 16 initial arrest survivors showing signs of life on admission. Both long-term survivors had signs of life on admission, but the 14-month-old girl had none at the scene. Pupil reactivity was more prominent in the initial survivor group, with 5 (31.3%) of the 16 showing reactivity. Only 2 (6.5%) of the 31 nonsurvivors showed pupil reactivity. Both long-term survivors had pupil reactivity on admission.

The results of blood pH and hematocrit were recorded in most patients. The average pH in each group was 7.34 in the long-term survivors, 7.18 in the initial arrest survivors, and 7.08 in the nonsurvivors. Hematocrit results were less useful, as there was little difference between groups. The average hematocrit for each group was 34 in the long-term survivors, 29.6 in the initial arrest survivors, and 33 in the nonsurvivors. In patients transferred from another facility, laboratory results at that facility were used as initial values.

There were 164 ATLS procedures performed in these 47 patients. The procedures included 53 thoracostomy tubes, 33 needle chest decompressions, 32 central line placements, 17 diagnostic peritoneal lavages, ten subxyphoid pericardial windows, ten exploratory laparotomies, three ER thoracotomies, four cricothyroidotomies, and two pericardiocenteses. The initial arrest survivors underwent placement of 16 central lines and 13 thoracostomy tubes, and had ten exploratory laparotomies, six diagnostic peritoneal lavages, three needle chest decompressions, two subxyphoid pericardial windows, one ER thoracotomy, and one cricothyroidotomy. Both of the long-term survivors required only central line placement during the initial resuscitation period. No patient who had an ER thoracotomy and/or exploratory laparotomy during the initial resuscitative period survived to discharge. One patient with exploratory laparotomy did become an organ donor (kidneys only).

Other points to note include organ donor status and charges generated by this subpopulation. Though five of the initial arrest survivors were potential donors, only two actually became donors, with a total of seven organs being harvested. The total charge generated by the 47 patients in this study was $1,009,699.00 resulting in the survival of two minimally functional children and seven organs for donation. This equates to the generation of $504,849.50 in charges to survive the two children and $72,121.36 to survive each organ. These figures represent only our institution's charges, as charges from outside facilities on the 18 patients transferred here were unobtainable. The children who survived in this study will never function as normal individuals in society and will continue to use large

(Continued on page 394)

Preventive Medicine Series

Aspirin for Prevention of Myocardial Infarction

DAVID M. MIRVIS, M.D.

Introduction

Aspirin (acetylsalicylic acid) was first synthesized in 1853 and first used clinically in 1899. It was recommended only as an effective anti-inflammatory, analgesic, and antipyretic agent until 1948. In that year, a clinical trial to assess its use to prevent thrombotic complications was initiated, and results were reported in a letter to the editor of the *Annals of Western Medicine and Surgery* in 1950.[1] Since that time, the pharmacologic properties that underlie its use in coronary artery disease have been extensively studied in the laboratory, and its effectiveness in modifying the thrombotic consequences of coronary atherosclerosis has been repeatedly demonstrated in clinical trials.

In 1990, a joint task force of the American College of Cardiology and the American Heart Association recommended that "long-term aspirin therapy should be given as a platelet inhibitor to all patients (with acute myocardial infarction) who can tolerate it."[2] Specific recommendations included prescribing aspirin at a dose of 160 mg/day, beginning immediately upon admission for suspected infarction and continuing for one month, followed by long-term therapy at a dose of 160 to 325 mg/day. In this report, we shall examine some of the evidence supporting these and related recommendations for using aspirin to prevent acute myocardial infarction.

Pathophysiology of Myocardial Ischemia

The acute cardiac syndromes of unstable angina and acute myocardial infarction are precipitated by clot formation in coronary arteries previously diseased by atherosclerosis. In unstable angina, periodic aggregation of platelets in coronary arteries leads to coronary constriction or thrombosis.[3] Angiographic studies performed within the first four hours after the onset of acute infarction have demonstrated complete occlusion of coronary arteries by thrombi in 87% of patients.[4] These and many other studies suggest that the basic pathophysiologic event leading to acute ischemic events is platelet deposition at the site of atherosclerotic plaques and the subsequent formation of thrombi that obstruct blood flow through the artery.[5]

Aspirin intercedes in this process by inhibiting the aggregation of platelets on to the damaged wall of the coronary artery.[6] Platelets pretreated with aspirin show reduced aggregation in response to stimuli such as exposure to collagen, epinephrine, and adenosine diphosphate. These effects likely result from blocking the synthesis of thromboxane A_2—a potent vasoconstrictor and direct promoter of aggregation—within platelets. Indeed, platelets are exquisitely sensitive to aspirin; thromboxane B_2 (a metabolite of thromboxane A_2) levels fall by over 90% within one hour of a single 100-mg dose of aspirin.

Secondary Prevention Clinical Trials

The efficacy of aspirin in *secondary prevention* of myocardial infarction, i.e., prevention of recurrent infarction in patients who have experienced a previous myocardial infarction, has been demonstrated by controlled, multicenter clinical trials. By 1992, ten large-scale trials including 18,411 patients had been reported.[7]

The first trial to test the hypothesis that aspirin prevents recurrent infarction was conducted by the Medical Research Council (MRC) in Wales and reported in 1974.[8] In this trial, 1,239 men with prior infarction received either 300 mg aspirin per day or a placebo. The group treated with aspirin had a 12% lower mortality after six months and a 25% lower mortality after 12 months than those in the control group. In a second, similar MRC trial, aspirin treatment reduced the incidence of new coronary events by almost 30%.

More recently, the Second International Study of Infarct Survival (ISIS-2) compared outcomes in 17,187 patients randomized to aspirin or placebo within 24 hours of onset of suspected myocardial infarction.[9] Those treated with aspirin had a 23 ± 4% lower mortality rate within five weeks than those in the control group. The rate of nonfatal reinfarction was 49 ± 9% lower in the aspirin group and that of stroke was 46 ± 17% lower in the treated cohort. These data indicate that one month of low-dose aspirin given to 1,000 patients would prevent 25 deaths and 10 to 15 recurrent infarctions or strokes. If therapy was continued for two to three years in these 1,000 patients, an additional 20 deaths would be prevented.

The conclusions of these studies are strengthened by *meta-analysis* of multiple studies. The technique of meta-analysis allows combining data from multiple studies with similar design to, in essence, examine the

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effects of aspirin in larger populations than present in any one study. A review of ten trials of antiplatelet therapy for the secondary prevention of cardiovascular disease in patients with prior infarction[10] demonstrated that antiplatelet therapy (with aspirin, dipyridamole, or sulfinpyrazone) resulted in a 31% reduction in the incidence of recurrent nonfatal infarction, a 42% reduction in nonfatal stroke, a 13% reduction in total vascular deaths, and a 22% reduction in any vascular event. When 25 trials studying the effect of antiplatelet therapy in various patient groups were evaluated, therapy resulted in a 15% reduction in cardiovascular mortality.

Lau et al[7] expanded this meta-analysis approach to determine after how many clinical trials enough evidence existed to conclude that aspirin was an effective agent for secondary prevention of acute infarction. The first two completed trials completed in 1976 established this conclusion with a *P*-value of <0.05 level; by 1979, four trials lowered the *P*-value to <0.01. Thus, results of well-designed clinical trials strongly support the routine use of aspirin for the secondary prevention of acute myocardial infarction.

Clinical trials have also supported the use of aspirin to prevent infarction in two other groups of patients with coronary artery disease—those with stable angina pectoris and those with unstable angina pectoris. The Physicians' Health Study[11] randomized a total of 22,011 male physicians to receive either aspirin (325 mg on alternate days) or placebo. A subset included 333 men with stable angina. In this subset, aspirin treatment reduced the incidence of infarction by 87% over the five-year study period.

Clinical trials have also documented the ability of aspirin to prevent development of infarction in patients with unstable angina pectoris. A Canadian multicenter trial[12] randomized 555 patients admitted to seven Ontario hospitals with unstable angina to receive aspirin, sulfinpyrazone, both or neither beginning within eight days of admission and continuing for up to two years. The group treated with aspirin had a 51% reduction in the rate of nonfatal myocardial infarction or cardiac death relative to that of the group treated with placebo. Sulfinpyrazone had no effect. Theroux and associates[13] reported results of a trial that randomized 479 patients within eight hours of admission with unstable angina to aspirin and/or heparin or placebo. Myocardial infarction developed within the first week in 11.9% of those given placebo but in only 3.3% of those treated with aspirin. Heparin was only slightly more effective than aspirin. In a third study, 796 men in southern Sweden with unstable angina were randomized to receive either placebo, 75 mg of aspirin per day, or heparin.[14] Aspirin reduced the combined rates of myocardial infarction and death by 65% to 69%. In this study, heparin had no effect on rates of infarction or death. Thus, there is compelling evidence that aspirin therapy can alter the outcome of unstable angina pectoris.

Aspirin for Primary Prevention

The efficacy of aspirin in secondary prevention trials leads naturally to the critical question of whether or not aspirin can prevent the first infarction in patients free of clinical ischemic heart disease, i.e., its role in *primary prevention*. This application was the role that Craven first proposed in 1950.[1] Over 98% of those enrolled in the Physicians' Health Study, referred to above, were free of clinical coronary disease.[11] In this group, the incidence of acute infarction during the five-year study period was 44% lower in the group treated with aspirin than in the control group. Beneficial effects were, however, limited to physicians over the age of 50 years and were greatest in subjects with significant risk factors for coronary disease, including hypercholesterolemia. Aspirin had no effect on development of angina pectoris or total survival rate.

Another study evaluated the incidence of initial infarction in 81,000 female nurses.[15] During a six-year period the incidence was 32% lower in those who took one to six aspirin tablets per week than in those who used no aspirin. As for physicians, benefit was limited to nurses over the age of 50 years and was greatest for those at higher risk for infarction, i.e., those with elevated cholesterol. Why those who took seven or more tablets per week had no reduction in infarction is not known. Both of these studies support the role of aspirin in primary prevention of infarction in patients without clinical evidence of coronary artery disease.

Complications and Side-Effects

The routine ingestion of even low-dose aspirin is not, however, without side-effects and complications. The most common side-effect is gastric irritation and the most important complication is bleeding. With the low doses used for prevention, the incidence of each is low. In the Physicians' Health Study,[1] the incidence of gastric complaints was essentially equivalent in the aspirin-treated group (26.1%) and in the control group (25.6%). Bleeding, including bruising, GI bleeding, epistaxis, etc., was more common in the aspirin group than in the control group as was the need for blood transfusion.

In the ISIS-2 trial,[9] patients admitted to the hospital with suspected acute infarction who were treated with aspirin also had a higher likelihood of bleeding complications. The incidence of hemorrhage requiring transfusion was, however, the same as in the group not given aspirin and no cerebral bleeding occurred. This trial also included patients treated with the thrombolytic agent streptokinase, with or without aspirin. The incidence of major bleeding events requiring transfusion in the group treated with streptokinase and aspirin was identical to that of the group treated with streptokinase without aspirin. Thus, the risk of bleeding is increased by aspirin therapy, but clinically important major bleeding episodes attributable to aspirin are uncommon or rare.

Conclusions

The evidence briefly reviewed here supports the use of aspirin in the primary and secondary prevention of acute myocardial infarction, except of course in those patients with relative or absolute contraindications. Thus, the routine use of low-dose aspirin (160 to 320 mg/day) in patients with stable or unstable angina pectoris or prior infarction is recommended. Treatment should begin as soon after the onset of infarction or stable or unstable angina as is appropriate and should be continued indefinitely. The evidence indicating a significant role in primary prevention indicates that routine use of low-dose aspirin in men and women over 50 years of age with significant risk factors for coronary disease, i.e., cigarette smoking, hypertension, elevated cholesterol levels or diabetes, is also reasonable. These and related findings also suggest that routine aspirin administration is appropriate in other patient groups with evidence of atherosclerosis, e.g., those with stroke, transient ischemic attacks, or peripheral vascular disease.

Recent studies have assessed the frequency with which these guidelines and recommendations are followed. Lamas et al[16] reported that, in 1990, 23.9% of survivors of acute infarction had been taking aspirin prior to the infarction and 71.9% received aspirin after the initial infarction. In 1987, the percentages were 16.2% and 38.8%, respectively. Thus, with time and dissemination of important information, more patients are receiving appropriate therapy. Room for continued effort remains, however, especially for primary prevention efforts. ❑

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Trauma Rounds . . .

(Continued from page 391)

portions of available health care dollars to simply maintain their nonfunctional existence.

Conclusion

Blunt trauma continues to be a significant health problem, especially for those aged 18 to 45 years.[6] Traditionally, a patient who sustained cardiac arrest after blunt trauma seldom arrived alive at the hospital. But as prehospital care becomes more sophisticated, a greater number of such victims will enter emergency departments with signs of life. The dismal prognosis of these victims, and the scarcity of functional survivors, argues against the commitment to them of medical resources.

Our data confirm previous reports demonstrating the futility of treatment of these patients, and the lack of positive neurologic outcome would suggest that aggressive resuscitative measures are counterproductive in this population of trauma patients.[7] ❑

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He Said—They Said

J. KELLEY AVERY, M.D.

Case Report

A young woman in her late 20s had a history of unprotected sexual intercourse for seven years. Convinced that she could not get pregnant, she and her husband appeared in the physician's office for an infertility workup. The history further revealed irregular vaginal bleeding for three months, which was not unusual for this woman. On this visit, however, she had not had any vaginal bleeding for the past six weeks. She had one previous pregnancy that terminated in a spontaneous miscarriage at seven months.

She was 5 ft 3 in tall and weighed 114 lb. The blood pressure was recorded at 120/60 mm Hg. The pelvic examination revealed the uterus to be softened and somewhat enlarged, and the left adnexa were enlarged in the region of the left ovary, which felt about 4 × 4-cm in size and cystic. The ultrasound was compatible with an intrauterine pregnancy and the cystic left ovary was thought to be a corpus luteum cyst.

She was counselled as to diet and the results of the ultrasound examination, and was given routine prenatal vitamins. At about 12 weeks the uterus was the size of a 15-week gestation and the ultrasound revealed a twin intrauterine pregnancy. At 24 weeks gestation the hemoglobin and WBC count were within expected ranges. An ultrasound examination was done and she was told to return in about two weeks.

On this last visit the patient later reported that she complained of abdominal pressure and that she was sent home and told to stay off her feet and rest more in bed. There was no mention of this in the OB record. The following day the patient called in to complain of vaginal itching and was sent some suppositories of Monostat by the attending physician's partner.

Later that same day the patient was visiting in the hospital when she began to complain of some significant vaginal pressure and the OB service was called. Attendants responded and arrived with a wheelchair and an emergency tray. They found that the patient had left the hospital and gone to her car in the parking lot. They found her in the back seat of her car with the BOW bulging from the vaginal orifice. She stated that she felt like she was having her babies. The attending physician was called and the partner on call responded promptly. She was moved to a stretcher and taken to the OB Department. The BOW was ruptured artificially. Ultrasound revealed the twin pregnancy but no heart action was observed. Within 20 minutes after her arrival in the OB Department, she was delivered of twin male infants, both of whom appeared to be in good condition considering their prematurity. The record states, "We were all delighted when two male infants with good heart action and respiratory effort were delivered and taken to the ICU." In the ICU, Apgar scores were not reported on the first twin, and on the second were recorded as 2 at one minute, 5 at five minutes, and 7 at ten minutes.

The delivering physician thought that the placenta showed evidence of significant abruption, but the pathologic examination did not confirm the delivering physician's impression. In his post-delivery progress note, the delivering physician recorded Apgar scores of 2,5,7 on twin #1 and 2,5,7 on twin #2.

Twin #2 died within the first 24 hours after delivery. There was no record available on this baby. Twin #1 had a stormy course, with severe hyaline membrane disease, evidence of bilateral intraventricular bleeding, a bout of staphylococcal sepsis at three weeks, retinopathy of prematurity, and severe cholestatic jaundice. The child survived, but had extensive brain disease which would require multispecialty support for the rest of his life.

A lawsuit was filed charging the attending obstetrician (not the delivering doctor) with negligence for failure to diagnose early labor on the day before delivery in his office, and for failure to attempt to stop the labor with tocolytic therapy. The damages demanded amounted to $10 million.

Loss Prevention Comments

This tragic case was one of a young couple who had been desiring a baby for years and who had given up only to find that the wife was pregnant when she came to the Ob/Gyn's office to explore therapy for their inability. The history of a previous pregnancy that ended in a spontaneous miscarriage at seven months might have been a clue of possible complications with this pregnancy.

The case was lost when on the day before delivery, the patient appeared in the physician's office complaining of pressure sensations in the vagina. There was no office record of this encounter. The physician's recollection of the encounter was of complaints of pressure. The patient's and her husband's testimony was that she revealed to her doctor that she was having the feelings of pressure, but also was experiencing intermittent pains in the abdomen. The physician remembers a pelvic examination showing a thick, long cervix with no dilatation. Both the patient and her husband testified that *no pelvic examination was done* on that visit.

Based on the physician's deposition, this case was reviewed and although there was no patient record to corroborate the physician's testimony, his peers felt that though the case was indeed dangerous, based on the record there had been no deviation from an accept-

(Continued on page 398)

Dr. Avery is chairman of the Loss Prevention Committee, State Volunteer Mutual Insurance Company, Brentwood.

The Case of the Month is taken from actual Tennessee closed claims. An attempt is made to fictionalize the material in order to make it less easy to identify. If you recognize your own case, please be assured that it is presented solely for the purpose of emphasizing the issues presented.

Vanderbilt Morning Report

Life-Threatening Hemolysis Following a Brown Recluse Spider Bite

Case Report

A 34-year-old woman with a history of asthma was transported to the hospital when a friend found her unconscious and cyanotic in her bathroom. The patient had been in good health until seven days before admission, when she was awakened from sleep by a "brown-colored" spider crawling on her right shoulder. The insect then bit her, causing a sharp "stinging-like" pain. Approximately 18 hours later, the patient went to her local physician complaining of neck stiffness, facial flushing, generalized pruritus, and nausea. Examination disclosed a lesion on her right shoulder that had a 2-mm central area of necrosis. This was diagnosed as a brown recluse spider bite, and she was given dapsone 25 mg three times a day, trimethoprim-sulfamethoxazole double strength one tablet twice daily, naproxen, theophylline, and lorcet, as well as ceftriaxone 1 gm by intramuscular injection, all without relief. Three days before admission, she felt feverish, with shaking chills, weakness, myalgia, and a generalized erythematous and pruritic rash. A diagnosis of allergic drug reaction was made, and she was instructed to stop all newly prescribed medications. Over the next 48 hours, the patient reported persistent fever, chills, sweats, weakness, and severe nausea and vomiting. On the day of admission, the patient awoke complaining of "blurry vision," confusion, and crampy abdominal pain. She experienced a syncopal episode. Her employer and a friend became concerned when she did not come to work, and when they investigated, they found her lying on the floor of her bathroom lethargic, cyanotic, and confused. She was admitted to St. Thomas Hospital.

The patient lives in Nashville. She is single, and has no children or pets. She does not use tobacco, or recreational or intravenous drugs, but does "drink socially."

On physical examination, she was afebrile, with a pulse of 142/min, a systolic blood pressure of 60 mm Hg, and respirations 30/min. She was lethargic, but was arousable and able to answer questions and follow complex commands. She had a 1-cm lesion with a necrotic base and a surrounding area of erythema and mild ecchymoses. There was no palpable adenopathy. Her sclera was mildly icteric but her oropharynx was clear. She had tachycardia but no significant murmurs, rubs, or gallops. Examination of her lungs, abdomen, chest, pelvis, and neurologic status were all normal. Her extremities were cold to touch with distal cyanosis of her fingers and toes, but without clubbing or edema.

The laboratory data included a WBC count of 40,100/cu mm, hematocrit 8.2%, platelets 292,000/cu mm and a differential of 10% nucleated RBCs, 18% bands, 53% neutrophils, 17% lymphocytes, 3% atypical lymphocytes, 3% monocytes, and 3% eosinophils. The RBC indices showed an MCV of 1,034 cu μ, MCH 35.0 pg, MCHC 34.5%, and RDW 14.8%. Other laboratory results included a sodium of 145 mmol/L, potassium 3.4 mmol/L, chloride 125 mmol/L, carbon dioxide content 8 mmol/L, glucose 99 mg/dl, BUN 22 mg/dl, and creatinine 0.8 mg/dl. Her SMA-12 was normal except for a total protein of 3.6 gm/dl, albumin 1.9 gm/dl, calcium 6.4 mg/dl, total bilirubin 2.6 mg/dl, and SGOT 66 U/L. The ABG showed a pH of 7.33, Pco_2 17 mm Hg, and Po_2 271 mm Hg. Other tests performed showed an INR 1.51, PTT 28.1 sec, methemoglobin 2.2 gm/dl, d-dimer 1.0, fibrinogen 400 mg/dl, LDG 1,495 IU/L, and CPK 75 U/L. Her urinalysis revealed 4+ protein, trace ketones, a large amount of blood, 5 RBC/HPF, 8 WBC/HPF, and no bacteria.

The patient was given the diagnosis of hemolytic anemia secondary to a brown recluse spider bite. She was aggressively treated with intravenous crystalloid, and transfused with a total of six units of packed red blood cells. Her peripheral blood smear revealed erythrophagocytosis by monocytes, leukoerythroblastic peripheral blood, and spherocytes consistent with hemolytic anemia. Also of note was the patient's ANA, which was <1:40, and a direct Coombs' test positive for complement (C3) but not immunoglobulins.

Over the next three hospital days, the patient continued to do well with improved appetite, strength, and mentation. Her hematocrit remained stable at 32% to 33% with no further signs of intravascular hemolysis. Her other tests returned to normal. All cultures (blood, urine, and sputum) were negative. The patient was discharged to home on day 5 of her hospitalization with a hematocrit of 32.5%. Her wound healed well without surgical intervention.

Discussion

Loxoscelism, also known as necrotic arachnidism, is the term used to describe the clinical effect on humans of the brown recluse spider bite (*Loxosceles reclusa*). There are two primary forms of loxoscelism, necrotic cutaneous lesions at the site of the bite, and a systemic syndrome that can include severe hemolysis and disseminated intravascular coagulation (DIC).

While there are over 70 species of Loxosceles found in temperate and tropical climates throughout the world, approximately 15 species inhabit North America, with *reclusa* being most commonly encountered by humans. The majority of cases of loxoscelism have been reported from a four-state region that includes Tennessee, Arkansas, Missouri, and Kansas.[1]

These spiders are quite shy and unaggressive (hence the name), but if startled or trapped will bite humans. They generally prefer dark, dry, secluded outdoor areas, but being intolerant of cold, they can be found indoors (attics, basements, closets) in North America. They are nocturnal, and the bite history will frequently disclose the patient's having rolled onto the spider while asleep in bed. A violin-shaped mark on the spider's dorsum helps to identify the brown recluse.[2]

Though the bite is usually painless, some patients

Presented by Lester K. Leung, M.D., medical resident, Vanderbilt University Medical Center, and Rufus Davis, M.D., chief medical resident, St. Thomas Hospital, Nashville.

recall a stinging sensation. After three to six hours, many patients will note local pain, swelling, and itching, and some patients generalized symptoms such as headache, fever, malaise, and pruritus. At 24 to 48 hours after envenomation, the wound may become erythematous and blistered, with a central pustule; the center will often turn blue-black, denoting necrosis, surrounded by a pale halo. This pale ring will in turn be encircled by erythema in a gravitational pattern, giving the wound a characteristic "red, white, and blue" coloration.[2] More severe wounds often develop in regions of high subcutaneous fat content, such as the buttocks, thighs, or abdomen.[1] Brown recluse bite wounds are notorious for their severity and slow healing. To insure proper healing, some require debridement and skin grafting several weeks after the bite.

A minority of bite victims will develop systemic complications, often more than two days after being bitten. These include hemolysis (which has reportedly sometimes been fatal) and DIC. The patients report fever and lethargy, rarely evolving to coma and death. Associated laboratory abnormalities include anemia, thrombocytopenia, leukocytosis, hyperbilirubinemia, and evidence of DIC. Patients may develop renal insufficiency due to hemolysis.[3]

Despite much scientific work, the exact mechanisms by which brown recluse venom causes disease have not been clearly defined. Enzymes in the venom include alkaline phosphatase, hyaluronidase, proteases, collagenase, and deoxyribonuclease, among others. Sphingomyelinase D, a phospholipase, is believed to be the enzyme primarily responsible for tissue necrosis. Why some patients experience hemolysis and DIC while most do not is poorly understood.[1]

The cornerstones of treatment are generally conservative, including rest, elevation of the affected limb, and the application of ice for up to three days after exposure. Most authors recommend empiric treatment with oral dapsone. There are few controlled trials supporting its use, but it makes theoretical sense, since dapsone inhibits neutrophil function, crucial to tissue necrosis. There are many anecdotal reports of success.[4] Initial surgical debridement is contraindicated; in a controlled trial by Rees and colleagues,[5] patients undergoing early surgical intervention had inferior wound healing at two to three weeks.

An antivenom has been produced using hyperimmune sera obtained from rabbits exposed to venom extract. It must be given soon after envenomation, however, to be clinically efficacious, and it is not commercially available.

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Calciphylaxis

Case Report

A 74-year-old veteran with a history of end-stage renal disease necessitating hemodialysis and peptic ulcer disease presented himself with a history of blisters on his lower extremities bilaterally for six weeks. The flaccid, violaceous bullae had progressively increased in size and number, and were situated on violaceous plaques with areas of necrosis and ulceration. Over the two weeks before his presentation, he noted an increased foul-smelling drainage from these sites. Additionally, he complained of increased edema of both legs to the point that he had been unable to walk for the previous three days. He denied any fever, chills, claudication, or chest pain. He was admitted to the Nashville VA Medical Center, where he was thought to have bacterial superinfection of these lesions. Treatment with broad-spectrum antibiotics was begun, including cefotetan, vancomycin, and tobramycin.

Laboratory evaluation during his admission included normal complement levels (C3, C4, CH_{50}), cryocrit, serum protein immunoelectrophoresis, prothrombin time, and partial thromboplastin time. Antinuclear antibodies, HIV, and hepatitis B and C serologies were all negative. An echocardiogram revealed moderate aortic sclerosis with fibrocalcification of the mitral and tricuspid valves. Wound cultures grew *Pseudomonas aeruginosa*, *Escherichia coli*, *Staphylococcus aureus*, enterococcus, and *Candida parapsilosis*, for which he was appropriately medicated. His parathyroid hormone was notably increased at 890 pmol/L, and his serum calcium and phosphorus were also elevated at 11.5 mg/dl (corrected for hypoalbuminemia) and 8.8 mg/dl, respectively; this resulted in a calcium-phosphate product of 101 mg^2/dl^2. Precipitation occurs normally at products of 70 mg^2/dl^2. Biopsies performed prior to his admission revealed dystrophic calcification involving the dermal-epidermal junction, dermis, blood vessels, and subcutaneous fat consistent with calciphylaxis. He was therefore diagnosed as having calciphylaxis and secondary hyperparathyroidism. A parathyroidectomy was performed one week after his admission.

Two weeks after his admission, bilateral above-the-knee amputations were performed due to progressive necrosis of both lower extremities, with poor blood flow noted by arterial Doppler ultrasound studies. Two days after his amputations, the patient became hypotensive while on hemodialysis. He had electrocardiographic changes consistent with anterolateral ischemia, and also had several episodes of "coffee-ground"

Presented by Carrie D. Alspaugh, M.D., dermatology resident, Lisa McDonald, M.D., dermatology resident, Vanderbilt University Medical Center, and J. Andrew Alspaugh, M.D., chief medical resident, Nashville VA Medical Center.

emesis. The patient became progressively tachypneic, with decreasing oxygen saturation. Hemodialysis was discontinued, and he was intubated in the medical intensive care unit. His respiratory function subsequently improved with extubation one day later. Two days after his transfer to the MICU, the patient began to complain of abdominal pain, and suddenly became apneic and asystolic. Resuscitation efforts failed. An autopsy was refused.

Discussion

Calciphylaxis is a syndrome occurring in patients with end-stage renal disease that is characterized by calcification of the media of arteries and arterioles. These vessels become inadequate in their ability to perfuse peripheral tissue with resulting ischemia and poorly healing distal lesions.[1] The term calciphylaxis was first used to describe the abnormal deposition of calcium within tissues in experimental animals, thought to be due to a hypersensitivity reaction. Similar calcium deposition was also seen in and around smaller arteries of patients with end-stage renal disease. These patients also frequently had hyperparathyroidism and an elevated calcium-phosphate ion product. Although somewhat rare, calciphylaxis is quite important to recognize because of the progressive and devastating nature of the associated lesions, as well as the potential preventability of this syndrome.[1,2]

The clinical presentation of patients with calfiphylaxis often begins with painful mottling of the skin of the extremities similar to livedo reticularis. The symptoms can progress to include bullous and ulcerated lesions with necrotic centers. Eschar formation and extensive gangrene occur later, and are serious sequela. Local wound care is often ineffective because of the severely limited blood supply, and proximal amputations may be indicated.[3]

The patients who develop calciphylaxis with end-stage renal disease characteristically have prolonged histories of hyperphosphatemia and secondary hyperparathyroidism. Early hypotheses concerning the etiology of this syndrome suggested that chronically elevated serum phosphorus values resulted in the propensity to precipitate calcium phosphate salts in tissues. Other factors, still poorly understood, are also likely involved in this process, since many patients live for years with elevated calcium-phosphate ion products without extensive calcinosis.[4]

Radiographically, calcium can be seen within small and medium-sized arteries in patients with calciphylaxis. Our patient had extensive calcinosis of his arterial system that was clearly seen in radiographs of the affected foot.[1] On histologic examination of biopsied material, calcium deposition can be seen in the media of medium-sized arteries as well as in the surrounding tissue. As in the biopsy specimens of this patient, local tissue necrosis is also quite common. Although some degree of medial arterial calcinosis is quite commonly seen in patients with end-stage renal disease, the calciphylaxis syndrome with ischemic necrosis of the extremities is quite rare.[3]

Treatment of the rapidly progressive lesions is frequently unsuccessful. Parathyroidectomy is often performed in those patients with hyperparathyroidism, with some improvement of the serum calcium and phosphate levels. The use of phosphate binders may also help to lower the serum calcium-phosphate ion product. The lesions of systemic calciphylaxis are, however, often the late manifestation of a long-standing process, and are rarely reversible. Amputation of extremities with ischemic lesions is often necessary. As in this patient, a fatal outcome is too commonly seen, making prompt identification and treatment crucial. In patients with end-stage renal disease, prevention of hyperphosphatemia with adequate dialysis and phosphate binders is essential to controlling the development of this often catastrophic syndrome.[1-3] ☐

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Loss Prevention Case of the Month . . .

(Continued from page 395)

able standard of care.

Expert testimony for the patient postulated that, if a pelvic examination had truly been done on the day before this tragic delivery, the attending physician would have found a softened and partially dilated cervix. This expert thought that the record did not reveal an indicated response to the first late miscarriage which, again, he speculated was due to an incompetent cervix.

The lawyers on the side of the patient were left with the question of, "Which of the principals in this case were to be believed." The questions regarding the unrecorded visit and the undocumented pelvic examination were thought to be too dangerous to place before a jury, where there would be a large sympathy factor pushing the facts toward the couple who had lost one twin and were attending to the demands of a severely brain damaged but surviving child.

A settlement in seven figures was worked out, with almost half of that amount placed in a structured instrument dedicated to the care of the surviving baby. ☐

Breast Cancer:
A Significant Public Health Concern

TAMMYLEE LEBOUEF

Breast cancer is the leading cancer diagnosis and second leading cause of cancer deaths for women in Tennessee. The American Cancer Society estimates that about 3,500 women are diagnosed annually with breast cancer in this state. The Tennessee Cancer Reporting System reported that 893 women died from breast cancer in 1993, an increase of 47 women from the previous year. The statewide crude breast cancer mortality rate of 34.6 per 100,000 women masks the disproportionate effect on African-American women who had a mortality rate of 37.1, compared to 34.4 in the state's white population. It is disturbing that, as reported by the Centers for Disease Control and Prevention (CDC), the state's age-adjusted breast cancer mortality rate, which was almost always less than the national rate throughout the 1980s, has virtually reached the national rate for the period 1990 to 1992.

Accordingly, both the CDC and the Tennessee Department of Health (TDH) have initiated programs that address early detection and control of breast cancer. In September 1994, CDC awarded the TDH a core capacity building grant for breast and cervical cancer prevention and control. Pursuant to the award of the grant, a statewide coalition consisting of many different health care organizations and consumer groups was organized. The coalition's charge is to help develop a coordinated statewide approach to these diseases, provide technical assistance, and improve collaboration among cancer stakeholders.

The program's objectives include initiating new strategies for public and professional education (as well as enhancing current strategies), assuring the highest quality mammography and cervical cancer screening services, and expanding the existing surveillance system. It is anticipated that the TDH will conduct a needs assessment of providers and consumers to determine the availability and extent of breast and cervical cancer services in the state and to identify possible gaps in early detection, as well as therapy. A state plan for breast and cervical cancer control in Tennessee will be developed, based upon input from a number of interested organizations, agencies, and groups. The state plan will include operational strategies for an ongoing, comprehensive continuing education program for health professionals. Grant funds will be earmarked to support expanded professional education initiatives based upon these recommendations.

In addition to the core capacity grant, the TDH has recently initiated two new programs designed to increase awareness about the importance of early breast cancer detection and to help mitigate the barrier of screening costs. The TDH recently funded ten education projects across the state to develop outreach programs designed to reach high-risk women. As examples of the types of projects that will be implemented, the Monroe Maternity Center, Inc. in Monroe County intends to use the funds received to conduct a community assessment and to use the *Each One Teach One* concept. An outreach nurse will take a breast cancer awareness message into communities at work sites, shopping centers, and churches in a five-county area. Meharry Medical College will work collaboratively with one of the managed care organizations participating in TennCare to hold seminars and demonstrations on breast cancer to 700 women 40 years of age and older who are served at the MCO's East Nashville Clinic. The YWCA of Greater Memphis will be the first in the state to implement the *Encore Plus* program that was developed by the YWCA at the national level. With support from the Shelby County Health Department to recruit underserved women, community awareness campaigns will be initiated, education programs held, and women referred for mammograms. The other seven organizations that received grant funds have developed similar initiatives to train women in breast self-examination and encourage them to participate in regular screening.

The TDH has also initiated the *Availability of Breast Cancer Screening Program* where eligible women can obtain screening mammograms, and, if necessary, limited diagnostic testing, at no charge. The TDH will pay participating facilities so that women who have incomes less than 200% of poverty and are

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From the Tennessee Department of Health, Nashville. Ms. LeBouef is the program director for Breast and Cervical Cancer Prevention and Control.

either uninsured or underinsured can access screening services. All patients must have a physician referral to qualify for the program. The TDH will enroll any accredited screening site in the state in the program.

Results of the 1993 Behavioral Risk Factor Surveillance System, a random telephone survey of adults living in the state, show that although more women are reporting having had mammograms, approximately 30% of Tennessee women 40 years of age and older still have never had one. Women most at risk, those with incomes less than $10,000 per year, at 43.4% comprise the highest percentage of those never having had a mammogram. Conversely, over 58% of all Tennessee women 50 years of age and older report having had a mammogram within the previous two years, a rate that has been increasing over the last few years but still falls well below the national median of 66%. According to the Health Care Financing Administration, only 21% of Tennessee women enrolled in Medicare Part B had mammograms in 1993.

Physicians are in a unique position to assure that women are routinely screened for breast cancer. Both the primary care physician and the specialist, who often assumes the role of primary health care provider for women with other chronic diseases, should routinely inquire about breast self-examination and perform or refer for clinical breast examinations and mammograms. Major national organizations, including the American Cancer Society and the National Cancer Institute, recommend that women 50 years of age and older receive a screening mammogram yearly. Though there is no consensus for women ages 40 to 49 or for younger women with a family history of breast cancer, all guidelines, at a minimum, direct women to consult their personal physicians to determine if a mammogram is appropriate for them.

In recognition of October as *Breast Cancer Awareness Month and National Mammography Day* on October 19, health care providers in both the public and private sectors should commit themselves to expanding their efforts on this important public health issue. It is imperative that women be made aware that the impact of breast cancer can be reduced through the earliest possible detection. ❑

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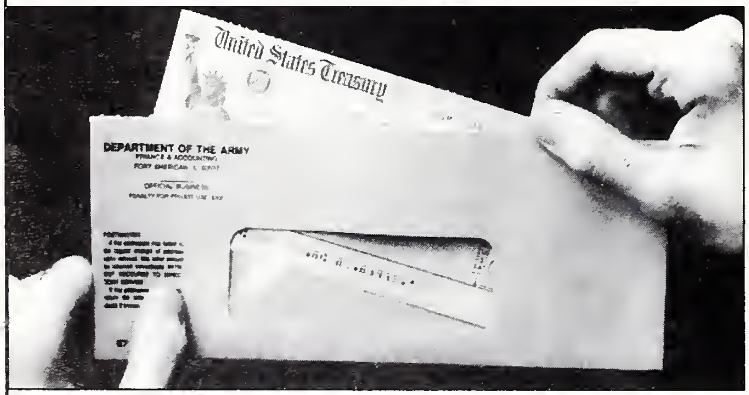

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Special Item

Managed Care: Lessons From the California Experience

MOHAN V. KIRTANE

Recently I went to see a physician friend in his office to pick up his contribution to a charity. A very civic-minded person, my friend usually hands me the check after exchanging pleasantries and a few minutes of conversation on some topical issues. This time, however, he looked rather distraught. "You better have a charity to raise money for me if this continues," he declared as he wrote the check. I looked at him with a questioning face. "The fellow who just left as you came in was from a new HMO in town." He continued, "He wants me in his provider panel if I give him a hefty discount on my fees. These guys are making money by reaching into my pocket. When is this going to stop?" he lamented.

I have heard this sentiment expressed over and over again during discussions with physicians. Managed care and managed competition are touted as a major defense against escalating health care costs. Enrollment in HMOs reached 20% of the population in 1994 and continues to increase rapidly. What has been the impact of HMOs on the principal players in the health care arena? It is useful to study the California experience because of California's status as a "trend setter" in health care issues.

- According to a *Wall Street Journal* report, liquid assets at many HMOs have climbed 15% or more during 1994. Four of the industry's companies have each tucked away more than $1 billion. Profit margins are high, thanks to rapid membership growth that is increasing at a rate of 11% a year and slowing medical costs. HMOs are reining in medical costs mostly at the expense of doctors and hospitals by negotiating discounts in fees and charges, as well as by cutting hospitalization rates.
- Employers are getting increasingly critical of high HMO profits and huge reserves. They are beginning to flex their muscles and demanding their share of the cost reductions. In January, Pacific Business Group on Health (PBGH) won an average premium reduction of 4.3% from 13 HMOs. PBGH includes 28 private and public sector purchasers. Another large purchaser, the California Public Employees Retirement System (CalPERS), got an average premium reduction of 5.2% for 1995 from 17 HMOs with which it has contracts.
- It appears that as payers turn on the heat and competition among HMOs intensifies, physician fee schedules and hospital per diem rates could fall 5% to 10% next year. Lower capitation rates could be another casualty of falling HMO prices as HMOs "pass on" the cuts to the providers.
- How are the patients faring in all this? Retrospective denials of emergency room visits are on the rise. Patients are beginning to rebel against overzealous attempts to reduce length of stay in hospitals. A classic example of patient rebellion is the recent passage of a bill by the New Jersey Legislature to mandate a 48-hour hospital stay for an uncomplicated delivery. Similar bills are pending in other state legislatures in response to complaints from patients that some HMOs are "encouraging" mothers to go home as soon as eight hours after the delivery.
- Is this managed care mania beginning to affect quality of care yet? It is encouraging to note that some purchasers of health care are concerned and watchful of the signs of negative impact on quality as a result of aggressive price cutting. Margaret Jordan, vice-president of Health Care and Employee Services of Southern California Edison, told a symposium at a Group Health Association of America conference in June that employers are asking "when we push on price, at what point does it hurt quality?" A number of employers track health plans' medical-loss ratios, i.e., the percentage of revenues that are used for medical care, rather than administrative costs and profits. The higher the ratio, the more a plan is allocating to health care costs. According to a California Medical Association report, some for-profit health plans, such as Well Point Health Network (70.2%) and HMO California (69.4%), had medical loss ratios in the 70% range. Others had ratios in the 90% range, led by not-for-profit Kaiser Foundation Health Plan (96.5%).
- A recently conducted survey by KPMG Peat Marwick reveals that heavy managed care penetration into the marketplace forces hospitals to be more cost-effective. Hospitals in California, for example, proved

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Mr. Kirtane, a former senior executive at Saint Thomas Hospital, Nashville, is president of Franklin Healthcare Consulting of Franklin, Tenn.

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to have lower costs than hospitals in Texas, where managed care penetration is lower. The KPMG study also shows that patient stays get shorter and mortality rates decrease as managed care competition increases.

What can physicians in Tennessee learn from the managed care revolution in California? The following points merit attention.

- The health care revolution currently underway has been produced by market forces. Over time, no section of the country will be immune to the effects of these forces. Most of the managed care activity in Tennessee is through PPOs that are limited in their ability to reduce costs. Employers are already beginning to organize coalitions in Middle Tennessee to purchase health care. Such developments will unleash market forces to move managed care activity in Tennessee from PPOs to HMOs over the next few years. So prepare yourself for the revolution!
- Physicians must organize themselves to be able to deal with managed care organizations. Several IPAs are already organized in most of the metropolitan areas of Tennessee, which is good. Membership in IPAs should preferably be 60% primary care physicians to be attractive to health plans, an attribute very few IPAs in Tennessee can claim.
- Health plans want to enroll physicians who are cost-effective providers. As physicians, you must enthusiastically participate if not lead the clinical reengineering initiatives at the hospitals where you practice. It behooves you to carefully examine your practice patterns in the context of clinical protocols designed to conserve resources as well as improve outcomes. Since information on your practice patterns is available to all health plans, avoid getting "deselected" from a provider panel.
- As you negotiate with health plans, ask for information regarding their medical-loss ratios and HEDIS "report card." HEDIS is an acronym for Health Plan Employer Data and Information Set, which provides basic measures of quality, efficiency, access, and membership policies of the health plan. This tool has been developed by the National Committee for Quality Assurance (NCQA). Although the tool has certain shortcomings, especially as it measures enrollee satisfaction, it will give you some idea about with whom you are dealing.
- Position yourself and your IPA to deal directly with payers. According to Russell C. Coile, a health care futurist from Santa Clarita, California, increased payer-provider integration is the wave of the future.

There is no doubt that the change in the marketplace will reduce income levels of at least a segment of the physician community. Physicians must *proactively* participate in *managing* this change, so that they can remain in control of the clinical dimension of the health care system and ensure that they are not shouldering an unfair burden of the negative economic impact on providers. ❑

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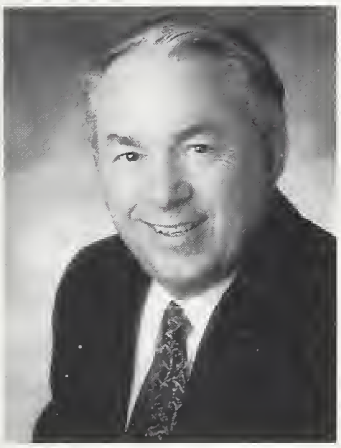

ROBERT E. BOWERS

Lawsuit Put To Rest

As you probably already know, in early July the Tennessee Medical Association dismissed its TennCare lawsuit that was pending against the State of Tennessee. Initially the lawsuit was instituted because the TMA believed that the TennCare program had been undertaken capriciously and without the counsel of physicians or other caregivers, and the lawsuit was the instrument by which we sought to expose the weaknesses of the TennCare system.

Though many issues were involved in the TMA's initiating the lawsuit, three important factors were addressed: (1) the need for the McWherter administration to be more open, and to reveal to us some of the intricacies of the TennCare program; (2) establishing that TennCare was grossly underfunded, as we believed it was; and (3) the need to effect fundamental changes in the TennCare program.

The lawsuit successfully accomplished these three goals. We gathered more information regarding the TennCare program from the previous administration; it was established that TennCare was and is markedly underfunded; and it effected changes in the program by allowing physicians, hospitals, and other caregivers a greater voice in its application.

The lawsuit appeal, however, was proving to be an impediment in our relationship with the present administration, and if we were to continue to make progress, it was clear that the lawsuit needed to be dismissed. After several meetings with Commissioner Bob Corker, the TMA has established a much improved relationship with the new administration, including the new head of TennCare, Rusty Siebert. These administration leaders are now much more open to input from physicians and others regarding the ongoing changes in health care delivery.

The lawsuit also has shown the rest of the country how *not* to develop a health care system, and we hope that our state will not attempt to bypass the caregivers in future systems.

I believe that the we owe a great debt of gratitude to a number of physicians throughout the state who gave of their personal time and expertise by testifying in Washington and Nashville, and gathering information for our cause. There were also many physicians who donated money for payment of the legal fees that we incurred, and we thank them as well. We are just now beginning to reap the benefits of the seeds sown by these endeavors. Because of the lawsuit, and the effort put forth by many of our physicians, perhaps TennCare is a little more palatable for all of us.

Robert Bowers

journal of the
tennessee
medical association

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OCTOBER, 1995

editorials

Incongruous Playmates

Back in the days I am remembering here, at least for the time being, playmates had not been heard of as having rabbit ears, or anyway not necessarily. Neither are they now necessarily. The difference is that though in those days it would have occurred to nobody that they might, nowadays it ain't necessarily so. It occurred to me that one need not make a bedfellow of one's incongruous relationship, since playing in his sandbox might be just as effective, or as treasonous, as the case may be, as well as less distasteful and the term less tasteless. I am using the term playmate here, as you might have guessed, in the classic sense, and not in the sense of a playmate that you, or perhaps better, one might get in bed with, another important distinction.

Also back in the herein remembered days we had something called Prohibition. I spell it here with a capital P to distinguish it from lower case generic type prohibition, because there is a difference, though the vast majority of you will remember the capitalized one only as a footnote in a history book. It made a great deal of difference in the households of many of my friends and acquaintances, though it didn't in ours, my parents being tee-totalers. In fact, such confirmed ones were they that it moved my father in 1928 to cast his vote in the presidential election for a (*shudder*) Republican against Democratic candidate Al Smith, who was a confirmed non-tee-totaler, dedicated to the repeal of the 18th Amendment to the Constitution of the United States. He, my father, that is, voted that way again in 1932, though much good it did him. Various groups with otherwise incongruous views got together to institute Prohibition, and various other similarly otherwise incongruous groups got together to rescind it.

Today those groups would collectively be called "minority groups." With all the talk about minority groups, have you ever noticed that there is not, fierce disclaimers to the contrary notwithstanding, any such thing in the strict sense of the word? Most of them are not distinctive groups at all. Oh, but, you say, what about race and gender? Well, even the NAACP recognizes that there are those with light skin color who find it expedient to start over again somewhere else as a member of a different race, and the determining of gender these days can sometimes turn out to be an iffy proposition. Definitions are continuously shifting and ill-defined since they are sometimes self-defined and at other times are defined by society. That way, on occasion an individual might be considered by some others as belonging to a group that given a choice he wouldn't be caught dead in.

I don't wish to belabor that point here, since this is not about that, but about interrelationships between groups as opposed to relationships between individual members of those groups, since any given individual can, either voluntarily or not, be included in any number of such groups, some of them on occasion at war with one another. For instance, to his dying day my father considered himself a Democrat, and had no time at all for the Republican party, being firmly convinced, as he often said, that the Republicans had never done anything good for the South. In fact, however, he never cast his vote for a Democrat for president between 1928 and 1949, when he died. On the other hand, Chattanooga was heavily populated by Yankee military and sundry others who stayed behind after The War, and a good many of his friends were numbered among that group. He remained a died-in-the-wool Democrat until the day he died, but he had a sticking point. It was demon rum, and he took that antipathy to the polls. We were sworn to secrecy about his electoral defection, because, he said, he didn't want to give his carpetbagger friends at the Mountain City Club that satisfaction.

My sticking point isn't the elixir of the gods, but I do have one. It is that famous doormat, the Constitution of the United States, which has been run over roughshod by the United States Supreme Court ever since Roger Taney, depending upon your persuasion a famous or infamous early Chief Justice, redefined some of its conditions to suit his own preferences. Because that is where I get off, I sometimes find myself playing in the same sandbox with the (*shudder, shudder*) ACLU. This time my playmate is an even more unlikely one.

I'll bet, if you have followed my previous writings, which it is of course conceivable, though barely, that you might not have, you could never have thought to find me taking the part of the American tobacco industry. (To be truthful, I also find it almost as repugnant defending Madison Avenue.) In fact, though, neither am I defending either of them here. I refer you to the fight over the 18th Amendment in the 1920s, where two of its most dedicated defenders were the ministers of the gospel and the bootleggers. In no way could it be inferred that those two very disparate groups were defending each other or their views or beliefs generally. For vastly different reasons, they simply found a common interest in maintaining Prohibition.

That is not, however, an exactly parallel situation, as I certainly have no interest in maintaining or even defending tobacco advertising. In fact, if I were a dictator it is one of the first things I would abolish. I am not a dictator, though. What's more, not only am I not a dictator, but I have an abiding interest in not having anybody else as a dictator. And now we are coming up on, if we have not already arrived at, my sticking point.

It is a truism, proven over and over again throughout history, that power corrupts, and absolute power corrupts absolutely. Generalizations are dangerous, and open to exaggeration, but it seems apparent that nearly everyone who aspires to head anything at all arrives at that station with an already well-developed agenda of his own. Of course, not everyone who arrives at such a station has aspired to it, and those who didn't might prove an exception to my generalization, though then again they might not (power corrupts, and so on). On attaining that exalted position, they generally bring all their available pressure to bear on effecting their wishes. If it can be done by fiat, so much the better. In fact, it is the only efficient way to govern. Of course, it almost always leads to bloodshed. With any luck their own is shed before there is a chance for them to shed that of others. Unfortunately, that infrequently happens.

Regardless of motivation or merit, in what to my mind was a despotic act the President of the United States invoked his executive powers to abolish the availability of and advertising about tobacco products to minors. That is likely unattainable without creating an oppressive bureaucratic monster that will dwarf even OSHA. The executive order came ostensibly to protect our youth from a drug that has been ruled addictive by our old friend the FDA, as I agree, for whatever it's worth, it unquestionably is, though I think also that is beside the point. It is not entirely unlikely that Mr. Clinton does indeed believe, as he says, that he is the savior of our future generations. Failing that, at least he apparently believes that enough of the citizens of the United States will agree with him that such a prohibition, which some of its critics, including me, are likening to the capital P one, will help him get reelected next November.

Please don't misunderstand this as a partisan gesture. As I wrote recently, as I watch Washington's political partisan infighting I can't tell the players or their teams without a program. Messrs. Gingrich, Dole, Gramm, Perot—especially—and any others of the candidates or would-be candidates, Republican or Democrat, that you can think of—yes, even our own Lamar Alexander, too—are fully capable, as indicated by their record, of duplicating his despotic act—not necessarily specifically, but generically. They all have delusions of grandeur, fueled by obsequious office seekers. *Control* is the name of their game.

Though I long as much as anyone else for the death of Joe Camel, the Marboro Man, and the Virginia Slim, tyranny is an infinitely worse alternative to their continued existence. It is sufficiently distasteful that I am willing to make common cause with Philip Morris, which should tell you a lot. We of the good ol' US of A are already among the most overregulated, overcontrolled populace in the world (and overtaxed, too), and that will be just one more nail in the coffin. While it may be the straw that will break Joe Camel's back, what few vestiges of our own freedom are still left will be collapsing under it, too.

J.B.T.

mail box

Request for Information

To the Editor:

I am working on a book on medical ethics and would like to enlist the help of other physicians to answer this question: Have you ever faced an ethical dilemma, and if so, how did you resolve it?

I am interested in all aspects of medical ethics—human experimentation, ethics of reproductive technology, abortion, medical treatment of the uninsured and poor, malpractice, physician-assisted suicide, the right-to-die (why some doctors do not honor living wills), genetic counseling, genetic manipulation, euthanasia, kidney, lung and heart transplant, use of fetal tissue, or any other situation concerning an ethical dilemma.

Please reply to:

Claude A. Frazier, M.D.
4C Doctors Park
Asheville, NC 28801

in memoriam

Milton Lee "Sam" Evans, age 84. Died July 14, 1995. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

James R. Headrick, age 67. Died August 11, 1995. Graduate of Vanderbilt University School of Medicine. Member of Chattanooga-Hamilton County Medical Society.

T. Wayne Higginbotham, age 53. Died April 14, 1995. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

James B. McGehee, age 55. Died August 4, 1995. Graduate of University of Mississippi School of Medicine. Member of Nashville Academy of Medicine.

J. Palmer Moss, age 80. Died July 9, 1995. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

John D. Peeples, age 71. Died July 5, 1995. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

Charles G. Robinson, age 80. Died May 2, 1995. Graduate of University of Tennessee College of Medicine. Member of Memphis-Shelby County Medical Society.

Ray G. Stark, age 82. Died May 7, 1995. Graduate of University of Louisiana School of Medicine. Member of Memphis-Shelby County Medical Society.

Arthur J. Sutherland Jr., age 85. Died August 1, 1995. Graduate of Vanderbilt University School of Medicine. Member of Nashville Academy of Medicine.

TMA Members Receive AMA Physician's Recognition Award

The following TMA members qualified for the AMA Physician's Recognition Award during July 1995. This list, supplied by the AMA, does not include members who reside in other states.

Physicians can receive the PRA certificate valid for one, two, or three years. For the one-year award, physicians report 50 hours of continuing medical education, including 20 hours of Category 1; for the two-year award, physicians report 100 hours of CME, including 40 hours of Category 1; for the three-year award, physicians report 150 hours of CME, 60 of which are Category 1. Each application for the PRA must also verify participation in Category 2 CME activities.

B. Daniel Beaver, M.D., Portland
James A. Bookman, M.D., Madison
Robert R. Casey, M.D., Oak Ridge
Thomas M. Crenshaw, M.D., Humboldt
Elbert C. Cunningham, M.D., Kingston
Eric P. Ellington, M.D., Maryville
James H. Growdon Jr., M.D., Nashville
John W. Hale, M.D., Union City
Ray W. Hester, M.D., Nashville
Joseph S. Hudson, M.D., Memphis
Michael E. Jones, M.D., Knoxville
Ronald C. Kelly, M.D., Bristol
Waldemar Kutzner, M.D., Collegedale
Susan L. Morgan, M.D., Antioch
Vito K. Rocco, M.D., Nashville

new members

The *Journal* takes this opportunity to welcome these new members to the Tennesssee Medical Association.

BRADLEY COUNTY MEDICAL SOCIETY
Karen Gilson, M.D., Cleveland

CHATTANOOGA-HAMILTON COUNTY MEDICAL SOCIETY
William E. Blalock III, M.D., Chattanooga
Mark A. Brzezienski, M.D., Chattanooga
Joseph B. Cofer M.D., Chattanooga
Daniel Constantinescu, M.D., Chattanooga
Siobhan A. Duff, M.D., Chattanooga
Peter G. Frizzell, M.D., Chattanooga
David R. Hall, M.D., Chattanooga
Dennis R. King, M.D., Chattanooga
Teresa A. Morrison, M.D., Chattanooga
David A. Rankine, M.D., Chattanooga
Mark T. Simpson, M.D., Hixson
Daniel R. Smith, M.D., Chattanooga
Timothy Talbert, M.D., Chattanooga
Christopher L. Vickery, M.D., Chattanooga

Jeffrey D. Visser, M.D., Chattanooga
Izak F. Wessels, M.D., Chattanooga
Jonathan D. Woody M.D., Chattanooga

GREENE COUNTY MEDICAL SOCIETY

William Robert Bridges, M.D., Greeneville
Andy Alfred Roberts, M.D., Greeneville

HENRY COUNTY MEDICAL SOCIETY

David Walter Kielty, M.D., Paris

KNOXVILLE ACADEMY OF MEDICINE

Mark E. Anderson, M.D., Knoxville
Jeffrey I. Brown, M.D., Knoxville
Steven A. McLees, M.D., Knoxville
George F. Scuchmann, M.D., Knoxville
P. Merrill White III, M.D., Knoxville
Caryn C. Wunderlich M.D., Knoxville

McMINN COUNTY MEDICAL SOCIETY

Thomas Sample Fliedner, M.D., Riceville

NASHVILLE ACADEMY OF MEDICINE

Lisa A. Altieri, M.D., Nashville
Stephen K. Ball, M.D., Nashville
Charles D. Blanke, M.D., Nashville
Joseph D. Chenger, M.D., Nashville
Afam C. Ikejiani, M.D., Nashville
Carl Anthony Mayeaux, M.D., Nashville
Marcus M. Min, M.D., Nashville
Michael Joseph Pagnani, M.D., Nashville
Catherine Robichaux Stallworth, M.D., Nashville
Robert J. Stallworth, M.D., Nashville
Thomas Chanley Wheeler, M.D., Nashville

NORTHWEST TENNESSEE ACADEMY OF MEDICINE

Anna Kristine Hopla, M.D., Martin

ROANE-ANDERSON COUNTY MEDICAL SOCIETY

Bradley D. Huhta, M.D., Oak Ridge
Brenda K. Peabody, M.D., Oak Ridge
Lech K. Pietrasz, M.D., Oak Ridge

SULLIVAN COUNTY MEDICAL SOCIETY

Elizabeth Anne Clemens, M.D., Kingsport

WASHINGTON-UNICOI-JOHNSON COUNTY MEDICAL SOCIETY

Carlos A. Floresguerra, M.D., Johnson City

WILSON COUNTY MEDICAL SOCIETY

Robert S. Grover, M.D., Mt. Juliet

announcements

CALENDAR OF MEETINGS

NATIONAL

Nov. 1-5	American Academy of Neurological Surgery—Ventana Canyon, Tucson
Nov. 2-5	Society for Literature and Science—Los Angeles
Nov. 6-12	Society for Clinical and Experimental Hypnosis—Plaza, San Antonio
Nov. 7-12	American Society of Cytology—Waldorf-Astoria, New York
Nov. 7-12	American Association of Gynecologic Laparoscopists—Orlando
Nov. 9-11	Southern Thoracic Surgical Association—Hyatt, San Antonio
Nov. 9-12	Academy of Psychosomatic Medicine—Princess Marquis, Palm Springs, Cal.
Nov. 11	American Society of Contemporary Medicine and Surgery—Drake, Chicago
Nov. 11-15	American College of Allergy and Immunology—Loews Anatole, Dallas
Nov. 13-16	American Heart Association—Anaheim, Cal.
Nov. 15-19	Gerontological Society of America—Westin Bonaventure, Los Angeles
Nov. 15-19	**Southern Medical Association—Westin, Kansas City, Mo.** (Last month we erroneously reported that this meeting was in San Antonio)
Nov. 16-20	American Academy of Physical Medicine and Rehabilitation—Marriott World Center, Orlando
Nov. 27-30	American Association for Women Radiologists—McCormick Place, Chicago
Dec. 1-3	American Academy of Psychiatrists in Alcoholism and Addictions—Ritz Carlton, Amelia Island, Fla.
Dec. 1-5	American Society of Hematology—Westin, Seattle
Dec. 6-8	National Conference on Chronic Disease Prevention and Control—Atlanta
Dec. 7-10	American Academy of Psychoanalysis—The Charles, Boston
Dec. 15-18	Ethical Issues in the Care of Terminally Ill and Dying Patients (sponsored by CEREC Center of Southeast Florida)—Rolling Hills Hotel and Golf Resort, Ft. Lauderdale, Fla.

STATE

Nov. 9-11	Tennessee Society of Internal Medicine and Tennessee Chapter, American College of Physicians—Park Vista Hotel, Gatlinburg

Actions of the Tennessee State Board of Medical Examiners

July, 1995

Name: Frank D. Green Jr., M.D. (Knoxville)
Violation: Disciplinary action by N. Dakota Board.
Action: Per agreed order, license voluntarily retired.

Name: George Nichopoulos, M.D. (Memphis)
Violation: Overprescribing; gross malpractice; prescribing controlled substances to a person who is addicted without making a bona fide effort to cure patient's habit.
Action: License revoked.

Name: Jagit Tandon, M.D. (Murfreesboro)
Violation: Unprofessional, dishonorable, or unethical conduct; license was suspended in June 1995 pending a psychiatric evaluation.
Action: License reinstated and voluntarily retired; may not be reinstated without appearing before the Board and submitting to any reviews or evaluations the Board deems necessary.

Highlights of the TMA Board of Trustees Meeting

July 7-9, 1995

The following is a summary of actions taken by the Board of Trustees of the Tennessee Medical Association at its regular third quarter meeting in French Lick, Indiana, July 7-9, 1995. THE BOARD:

TennCare Appeal

Agreed to drop the State Supremme Court appeal of the TennCare lawsuit.

TMA Strategic Plan

Discussed the long range/strategic plan for the Tennessee Medical Association with Mr. Bill Stiles, a long-range plan facilitator.

Graduate Medical Education Task Force

Agreed to submit the names of Drs. Charles Ed Allen, Johnson City; Charles W. White, Lexington; and David G. Gerkin, Knoxville, for consideration of appointment to the TennCare Graduate Medical Education Task Force.

Cancer Reporting Advisory Committee

Agreed to submit the names of Drs. Dean Taylor, Franklin (for reappointment); Phillip Pollock, Chattanooga; and Michel Haddad, Kingsport, for consideration of appointment to the Cancer Reporting Advisory Committee.

Board of Electrolysis Examiners

Agreed to submit the names of Drs. Anthony L. Myers, Knoxville; Michael Gold, Nashville; and Denise Buntin, Nashville, for consideration of appointment to the Board of Electrolysis Examiners.

Panel on Health Care Facilities Penalties

Agreed to submit the names of Drs. John B. Dorian, Cordova; Francis H. Cole, Memphis; and Robert W. Myers Sr., Chattanooga, for consideration of appointment to the Panel on Health Care Facilities Penalties.

Board of Medical Examiners

Agreed to submit the name of Dr. Joe B. Cooper, Kingsport, for consideration of appointment to the Board of Medical Examiners. (The Board, at its April meeting, submitted the name of Dr. Angelo Garbarino, Kingsport, for consideration of reappointment. Dr. Garbarino had informed the Board that he does not wish to serve another term. Dr. Joe B. Cooper's name was selected.)

Perinatal Advisory Committee

Agreed to submit the names of Drs. Mark Allen Clapp, Jamestown (for reappointment); Clark B. Smith, Memphis; and Mike H. Harstell, Greeneville, for consideration of appointment to the Perinatal Advisory Committee representing family physicians. The Board further agreed to submit the names of Drs. Donald W. Tansil, Cookeville; Valarie A. Boaz, Chattanooga; and William C. Warner Jr., Memphis, for consideration of appointment to the Perinatal Advisory Committee representing the public health agencies.

Standing & Special Committee Reports

Received written reports from the following standing and special committees: Committee on Legislation, Primary Care Liaison Committee, CARE Program, Committee on Rural and Community Health, Committee on Continuing Medical Education, and the Judicial Council.

Report of the Sports Medicine Committee

Approved the standardized sports physical form developed by the TMA Sports Medicine Committee and the Tennessee Secondary School Athletic Association.

Report of the Membership Committee

Approved a recommendation from the Membership Committee for credentialing physicians eligible to join the Tennessee Medical Association directly.

Quarterly Reports

Received quarterly reports from State Volunteer Mutual Insurance Company, Independent Medicine's Political Action Committee–Tennessee, Tennessee Medical Foundation, Tennessee Delegation to the American Medical Association, and TMA Physician Services, Inc.

Information Systems Study

Approved the expenditure of up to $1,500 to study the current TMA computer and telecommunication system in order to move the Association forward and comply with Resolution No. 25-94.

TMA Alliance Report

Received a report from TMAA president, Mrs. Lyn Overholt.

Study of the Federation

Agreed to continue to support the AMA's Study of the Federation and to contribute its original annual payment of $1,500.

Annual Meeting Committee

Received a report from the TMA Annual Meeting Committee and agreed to direct the long-range plan facilitator to review the purpose and mission of the annual meeting and to report back to the Board in October.

Financial Report

Received second quarter financial report from Dr. Michael McAdoo, chairman of the Finance Committee.☐

Physicians' Spouses Dedicated to the Health of America

TMA Alliance is just what this title is all about. We are members of a unique organization, partners in marriage and in medicine. Those of us who choose to join an Alliance are aware of the concerns of medicine and believe that our volunteer efforts on its behalf are a valuable asset to our spouses, neighbors, community, and nation.

We are all in this together. From affecting legislative issues such as health care reform, to fighting family violence . . . to supporting each other in times of crisis, physicians' spouses find that Medical Alliance membership makes a difference in their own lives and those of others. We invite you and your spouse to be a part of this team to support our efforts.

Medical Alliances over the country will be actively involved in SAVE (Stop America's Violence Everywhere). SAVE is intended to focus attention on the nationwide problem that exists everywhere—in homes, in schools, on the streets, and in the media. What better way to stop this violence could there be than to join the fight as a member of a Medical Alliance really doing something.

The Medical Alliance has become a form of public relations for medicine. It is the *only* organization that represents the concerns of physicians by education, philanthropy, lobbying, public awareness, and support. Together we can make a difference! ❑

Theresa Hall, Membership Chairman

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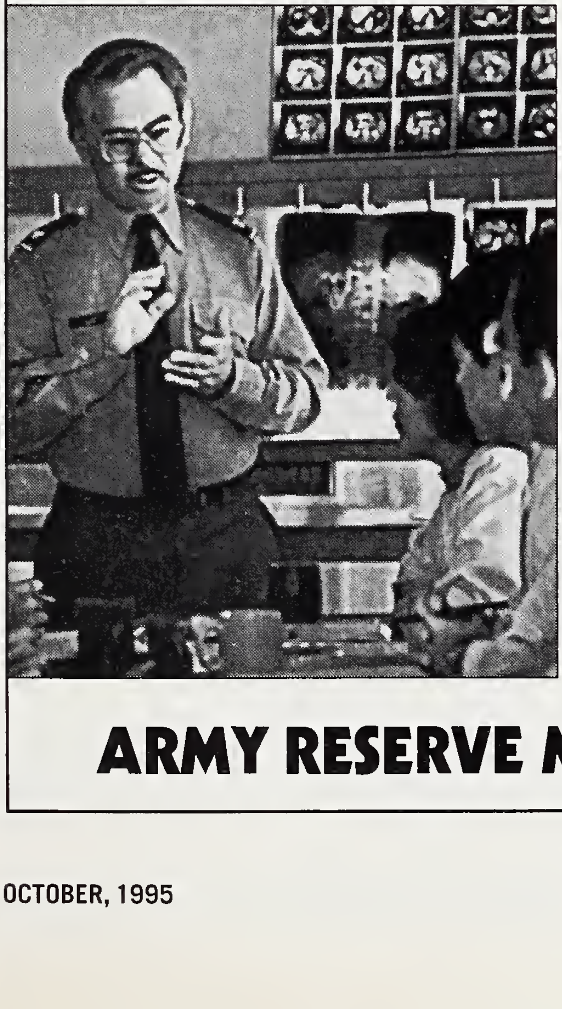

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TMA continuing medical education opportunities

TMA is accredited by the Accreditation Council for Continuing Medical Education (ACCME) as a sponsor of continuing medical education for physicians. As an accredited sponsor, TMA is authorized to designate certain CME activities for credit in the AMA Physician's Recognition Award Program.

TMA is recognized by ACCME as the accreditor of institutions in Tennessee conducting intrastate CME programs. Any organization conducting such programs may apply to TMA for accreditation as a sponsor of CME.

Inquiries regarding application for accreditation as a sponsor of CME should be made in writing to: Director of Continuing Medical Education, Tennessee Medical Association, PO Box 120909, Nashville, TN 37212-0909.

IMPORTANT NOTICE

Published in this section are many educational opportunities which come to our attention which might be of interest to our membership. As some of these are very long, full year schedules, and others are detailed descriptions of courses, in order to conserve space, most of them will be published in only one issue of the Journal.

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The Expanded Role of Coronary Angioplasty During Pregnancy

ANTOIN H. MARDINI, M.D.; MARY KIDD CHAPMAN, M.D.;
THOMAS E. GAINES, M.D.; and JAMES J. ACKER, M.D.

Case Report

A 42-year-old white gravida 2, para 0, abortus 1 with a history of tobacco abuse who weighed 225 lb and was 63 in tall, came to UT Medical Center (UTMC)-Knoxville on April 27, 1994 with intrauterine pregnancy of a little over six weeks. She strongly desired to carry this child to term. She had a history of hypertension since 1989 and she had been taking verapamil 80 mg three times a day since November 1993. She had a history of Crohn's disease, diabetes mellitus type II, and hiatal hernia. She had related a history consistent with prolonged angina pectoris on Nov. 22, 1993 at an outlying hospital, and an EKG from that institution was consistent with diffuse anterior ischemia with a possible septal infarction of undetermined age.

She subsequently was admitted to UTMC-Knoxville on June 29, 1994 with unstable angina pectoris with chest and bilateral arm distress, associated with hypertension and striking ST-T changes consistent with anterior ischemia and/or injury. At that point, there was no evidence of myocardial necrosis. An echocardiogram suggested normal cardiac chamber size with an ejection fraction of 62%. No regional wall motion abnormality was appreciated. On June 30, 1994, she had an elective coronary angiography with protection of the fetus by a lead apron placed both over the anterior and posterior aspects of the abdomen. Although she had significant disease of the right coronary artery and circumflex vessel, the culprit lesion was a subtotal occlusion of the left anterior descending vessel that filled both antegrade from the left coronary artery injection and retrograde from the right coronary artery injection (Figs. 1 and 2). This lesion was easily opened with a 3-mm balloon by PTCA (Fig. 3) and the lesion appeared reduced from 99% to 10%. She was discharged July 2, 1994 taking diltiazem hydrochlo-

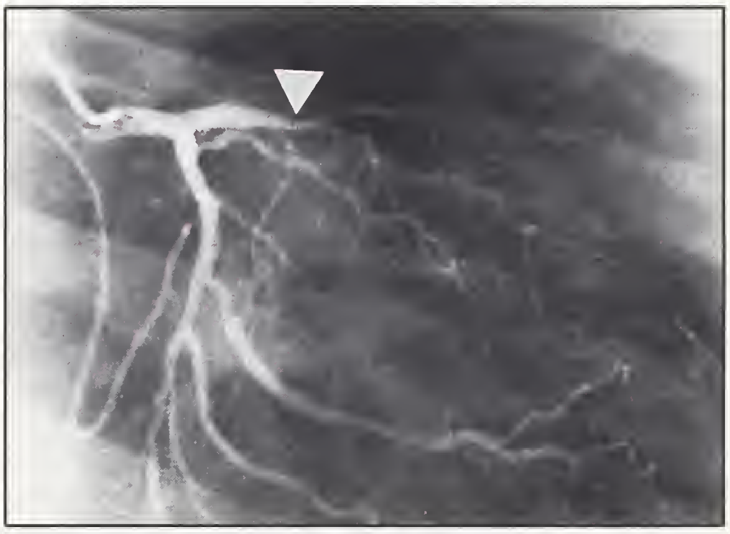

Figure 1. Subtotal occlusion of the proximal left anterior descending coronary artery.

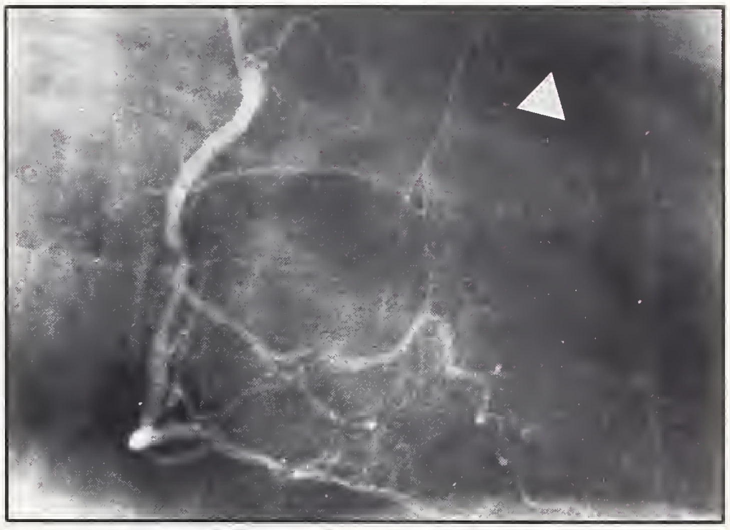

Figure 2. Retrograde fill of a "ghost" of the mid and distal left anterior descending coronary artery after right coronary artery injection.

From the Departments of Medicine, Ob/Gyn, Thoracic and Cardiovascular Surgery, University of Tennessee Memorial Research Center and Hospital, Knoxville.

Reprint requests to University of Tennessee Memorial Research Center and Hospital, Suite 260, 1932 Alcoa Highway, Knoxville, TN 37920 (Dr. Acker).

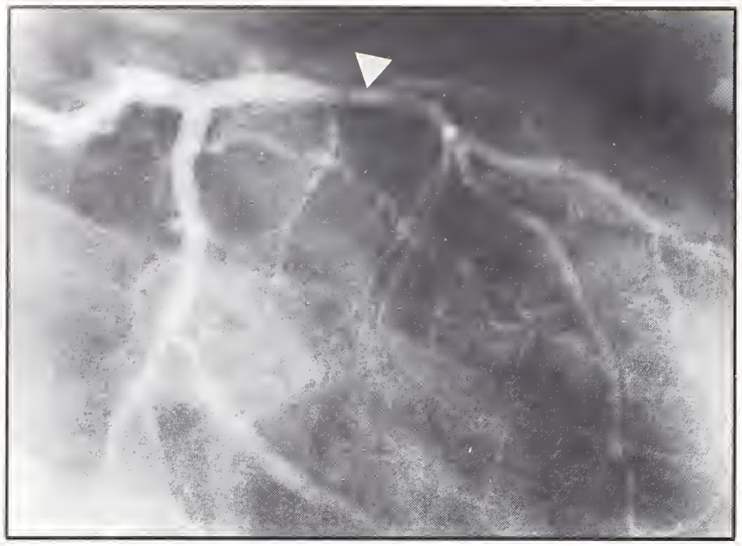

Figure 3. After coronary angioplasty for subtotal occlusion of the left anterior descending coronary artery with good distal run off.

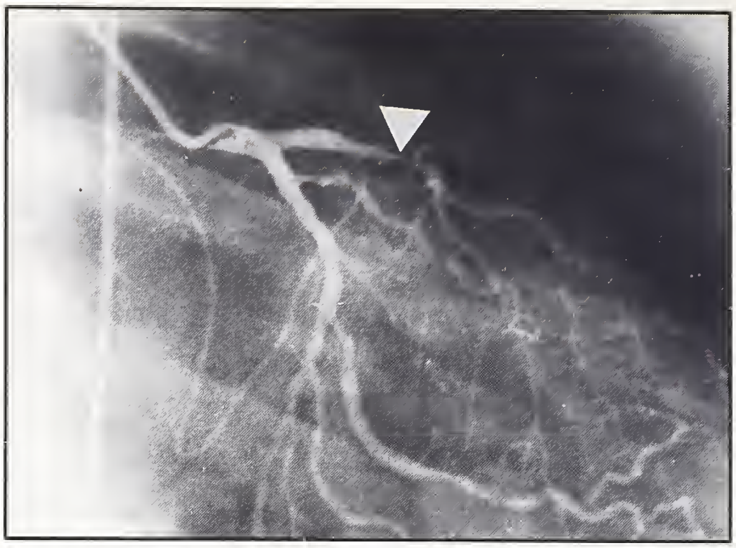

Figure 4. Critical restenosis eight months after successful angioplasty in the left anterior descending coronary artery.

ride, aspirin, insulin, and vitamins, with subinguinal nitroglycerin as necessary.

She was readmitted on Nov. 2, 1994 for elective vaginal delivery after artificial rupture of the membranes and medical induction. She delivered a 2,212-gm female infant and was discharged taking diltiazem HCl, hydralazine HCl, glyburide, and insulin. She remained comfortable until Feb. 3, 1995, when she was readmitted to UTMC-Knoxville for recurrent angina pectoris. She was found to have significant re-stenosis of the LAD lesion (Fig. 4), with triple-vessel coronary artery disease but with normal left ventricular function. On Feb. 6, 1995, she had elective coronary artery bypass surgery characterized by left internal mammary graft to the left anterior descending coronary artery, saphenous vein graft to the posterior descending coronary artery, saphenous vein graft to the obtuse marginal branch, and a saphenous vein graft to the acute marginal branch. She was discharged home taking nizatidine, Ecotrin, oxycodone/acetominophen, glyburide, and insulin. To date she has remained comfortable and able to care for her infant without recurrent cardiopulmonary symptoms.

Discussion

This case demonstrates the role of successful PTCA in the management of unstable angina pectoris during pregnancy. We found only one such application in pregnancy in the literature.[1] Consultation with the Andreas Gruentzig Cardiovascular Center of Emory University School of Medicine revealed no personal experience with the application of angioplasty in pregnancy (personal communication, Dr. Spence B. King, III). Since that date, we note two other cases of coronary angioplasty in pregnancy,[2] one of which required stent placement.[3]

This would appear to represent a rather rapidly expanding role for angioplasty in pregnancy in the setting of unstable angina pectoris.

We would encourage the development of a national registry to make these data available to both the cardiologists and those physicians responsible for the primary care of the pregnant woman. ❑

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Bronchiolitis Obliterans Organizing Pneumonia:

A Community Hospital Experience

JOHN D. CLARK, M.D.; JAY B. MEHTA, M.D.; and THOMAS M. ROY, M.D.

Introduction

At the turn of the century, Lange[1] described bronchiolitis obliterans in two patients. Subsequently, bronchiolitis obliterans has been associated with gas inhalation, viral and bacterial pneumonia, and connective tissue diseases.[2-4] The term was used when a patient had findings on a chest radiograph similar to those seen in acute bronchiolitis and with histopathology that showed peribronchiolar fibrosis with luminal narrowing.[5] This terminology was challenged by Epler[6] in 1985, in his review of 94 cases of bronchiolitis obliterans, which demonstrated that 57 of the cases had evidence of masses of granulation tissue representing a reparative process. This distinction has led to a better understanding of the two conditions as separate entities. Indeed, the pulmonary function profile and prognosis are distinctly different, especially with response to treatment.

Because this distinction has been in place for only a decade, we wished to analyze its accuracy in the community hospital setting and compare the patients' demographics and outcome with that published from larger centers. We provide a review of bronchiolitis obliterans organizing pneumonia (BOOP) and its treatment for the practicing physician.

Methods

All patients who were diagnosed as having BOOP and who were treated in the community hospitals of Johnson City, Tenn., were identified by computerized diagnosis retrieval by the medical records departments for the period January 1989 through January 1994. Additional cases of BOOP that may have escaped proper coding were searched for by cross-referencing diagnostic codes with the pathology departments.

Fifteen patients were identified and their histopathologic diagnoses were reviewed. The inclusion criteria were based on the pathologist's final opinion. Three patients were excluded because of revised pathologic diagnosis. The remaining 12 individuals provide the data for our analysis.

Medical records were reviewed for age, weight, gender, smoking history, occupational exposure, symptoms, radiographic findings, method of diagnosis, pulmonary function testing, length of stay in the hospital, treatment outcome, and survival.

Descriptive statistics were performed to determine mean values and standard deviations from the means. The group was subdivided into survivors (n=7) and nonsurvivors (n=5). Nonpaired T-tests were performed on numerical parameters. A P value of <0.05 was used to indicate statistical significance.

Results

The demographics of the study group are displayed in Table 1. All patients were hypoxemic, with diminished capacity for oxygen exchange, as expressed by the arterial/alveolar oxygen tension ratio (PaO_2/PAO_2). Each of the patients suffered from dyspnea, but this could not be quantitated by our retrospective analysis. Five patients did not smoke cigarettes, two patients had stopped smoking five years before diagnosis, and five patients continued to smoke tobacco in light or moderate amounts. There was no correlation between smoking status and the objective parameters of the disease.

Radiographic patterns were varied, but a pattern of diffuse or patchy interstitial infiltrate occurred in 8 of 12 (66%). Four patients had nodular opacities (33%). Interestingly, 5 of 12 (42%) had pleural effusions. Pulmonary function studies with lung vol-

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TABLE 1

SUMMARY OF VARIABLES ANALYZED IN COMMUNITY HOSPITAL POPULATION WITH BOOP

Variable	Mean and SD	Range
Age in years	62.60 ± 14.70	33.00 - 82.00
Weight in lb	147.60 ± 26.50	108.00 -194.00
Avg. length of stay	15.20 ± 7.90	5.00 - 28.00
PO_2 mm Hg	53.20 ± 10.80	36.00 - 63.00
PCO_2 mm Hg	38.20 ± 5.50	30.00 - 47.00
pH	7.43 ± 0.03	7.38 - 7.49
FVC % pred	65.90 ± 16.20	46.00 - 91.00
FEV_1 % pred	62.60 ± 13.90	42.00 - 81.00
TVC %	79.80 ± 22.00	55.00 -119.00
TLC % pred	76.20 ± 22.50	46.00 -116.00
DL_{CO}	47.40 ± 15.00	32.00 - 71.00

TLC: Total lung capacity
DL_{CO}: Diffusion capacity for carbon monoxide

TABLE 2

COMPARISON OF PARAMETERS OF SURVIVORS AND NONSURVIVORS

Variable	Survivors	Nonsurvivors	*P* Value
Age in years	59.00 ± 13.20	67.00 ± 12.60	0.39
Weight in lb	148.00 ± 7.80	146.00 ± 44.70	0.95
Length of stay	12.70 ± 7.50	18.60 ± 8.00	0.34
PO_2 mm Hg	54.00 ± 9.20	51.20 ± 10.00	0.64
PCO_2 mm Hg	35.40 ± 5.10	39.70 ± 6.60	0.28
pH	7.38 ± 0.03	7.44 ± 0.03	0.78
PaO_2/PAO_2	0.51 ± 0.09	0.44 ± 0.14	0.42
TVC %	75.40 ± 17.40	90.00 ± 32.40	0.52
FEV_1	64.70 ± 14.40	57.70 ± 13.80	0.50
FVC	70.30 ± 17.70	55.50 ± 3.20	0.07
TLC	79.80 ± 24.60	63.50 ± 0.70	0.13
DL_{CO}	53.00 ± 14.00	34.00 ± 7.00	0.01*

**P* value statistically significant

umes confirmed the restrictive pattern expected with BOOP. A mild restrictive pattern predominated even in those individuals who were smokers.

One patient gave a history consistent with an autoimmune process that was expressed clinically by Raynaud's phenomena. Another individual had a remote but significant exposure to a pesticide. The remaining 10 of 12 individuals (83%) failed to associate their pulmonary problem with exposure to infection, toxins, or collagen vascular disease.

When the individuals were separated into those who survived and those who died (Table 2), it appears that the nonsurvivors tended toward a greater degree of restriction as expressed by the forced vital capacity (FVC) maneuver ($P=0.07$). The single clinical factor that achieved statistical significance was the diffusion of carbon monoxide (DL_{CO}). The mean value in the nonsurvivors was significantly less than that measured in survivors ($P<0.01$).

Discussion

The distinction between bronchiolitis obliterans and bronchiolitis obliterans organizing pneumonia (BOOP) has clinical significance. The former entity tends to be an irreversible obstructive process, while BOOP shows a restrictive pattern and a good response to treatment with corticosteroids.

The confusion facing the clinician goes beyond similar sounding terms. It is now recognized that many cases reported as bronchiolitis obliterans before 1985 were actually BOOP. The distinction between these two pulmonary processes has been honored only during the last decade, after Epler et al[6] defined the true histopathologic features of BOOP. BOOP is, then, not a new entity, but one that must be strictly defined to avoid confusion with bronchiolitis obliterans. An effort is underway to promote the term *cryptogenic organizing pneumonia* to replace BOOP and strengthen correct communication between physicians.

Men and women are reported in most studies to be affected equally. In our community hospital experience, women outnumbered men 3:1. As the majority of our cases were primary idiopathic disease, as in Epler's original study, we cannot evoke the female predominance for collagen vascular disorders to explain this disparity. It is possible that in a retrograde study, a selection bias has been introduced by gender preference for definitive diagnosis by open-lung biopsy. Likewise, a physician may be more willing to forego lung biopsy in a male patient, presuming that the patient had forgotten some occupational exposure that eventuated in a chronic interstitial process. This trend will be followed in an ongoing prospective study at the same hospitals.

While bronchiolitis obliterans is refractory to treatment, BOOP generally shows a favorable response to treatment with corticosteroids or immunosuppressive agents such as Cytoxan[7] (Figs. 1 and 2). Each of our patients was treated with glucocorticosteroids, but the long-term response was not what we would have hoped. Five of the 12 patients (42%) died within 12 months of diagnosis. This poor response suggests late diagnosis and delayed treatment, a major impetus for this report.

The histologic characteristics of BOOP are now well described. They include finding polypoid masses of granulation tissue filling the small airways, the alveolar ducts, and some alveoli. Mononuclear cells infiltrate the interstitium, and foamy macrophages are present in the alveoli.[8] The diagnosis typically requires an open-lung biopsy. Each of our patients had a nondiagnostic fiberoptic bronchoscopy with biopsies, but required the open-

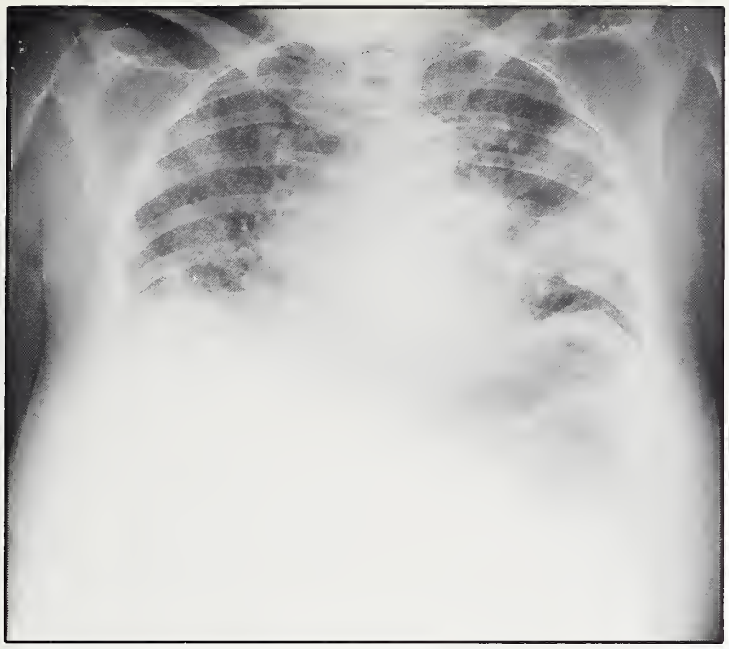

Figure 1. Chest radiograph of patient with BOOP before treatment with corticosteroids.

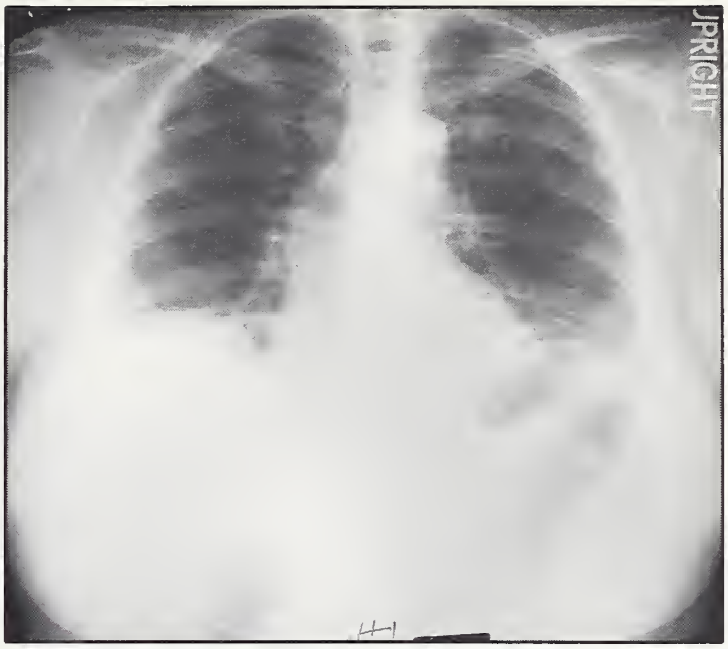

Figure 2. Chest radiograph of patient with resolution of infiltrate after treatment with corticosteroids.

lung biopsy for definitive diagnosis.

The clinician's index of suspicion for BOOP should be high when a patient develops a flu-like illness with a pulmonary infiltrate that resembles interstitial community acquired pneumonia. Lack of response to antibiotics is accompanied by worsening gas exchange and a restrictive pattern on pulmonary function testing. Generally, the patient fails to improve spontaneously over a two-month period. Diffusion capacity for carbon monoxide will be at its lower limits.

In the community, a greater awareness of this entity should lead to aggressive diagnosis and improved survival from appropriate therapy. Transbronchial biopsy by fiberoptic bronchoscopy is usually performed first and is important in eliminating other etiologies. Open-lung biopsy is the procedure of choice and provides a large enough specimen for accurate diagnosis. ❑

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"Back Mice"—A Prevalence Study

DANIEL T. EARL, D.O.; JASON C. LYNN, B.S.; and J. MICHAEL CARLSON, D.O.

Introduction

Back pain is one of the most common ailments encountered in primary care. An estimated 11.3 million physician visits per year result in between $17.9 billion[1] and $50 billion[2] yearly in medical expenses for the evaluation and treatment of back pain. It has long been recognized that there are various factors that assist the clinician in predicting those persons who are at risk for low back pain. Such findings as hyperlordosis, poor posture, and faulty lifting techniques[3] all contribute to the development of back problems. Any physical diagnostic clue that might assist in identifying those persons with a predisposition for back problems would be helpful.

"Back mice" are palpable soft-tissue fibrotic lesions first described by Ries.[4] They are described as being single or multiple lesions of variable size, situated anywhere from the level of the first lumbar vertebra to the sacrum. It has been proposed that the incidence of back mice is about 16% in the general population, and that they may be associated with a history of back pain.[5] There is disagreement as to the significance of these lesions, and whether or not they should be treated. One treatment method is injection with lidocaine.[6] Other treatment regimens have included excisional biopsy and physical manipulation.[7]

It is our impression the prevalence of back mice is significantly higher than 16%, and that a large portion of them are of no clinical significance. We examined a number of patients in a family medicine outpatient clinic for the presence of back mice and history of back problems/pain, and extrapolated some standard demographic information.

Study Design/Methodology

Prospective study participants were recruited from patients attending Family Medicine Associates (FMA), a family medicine clinic with 18 family physicians, part of the family medicine residency program in Johnson City. One hundred persons who came to FMA for general family medicine services were asked to participate in the study, given informed consent, a brief questionnaire for demographics, and a pain scale questionnaire (McGill Pain Questionnaire) related to history of back-related problems. One of us (JCL) recruited persons in the waiting room and triage areas, explaining the study and offering informed consent. Prospective subjects were over age 17 years and had to agree to participate in the study.

Examination of the participants took place in the examining rooms at FMA by either DTE or JMC, both having advanced skills in palpatory diagnosis. A standardized examination and form were completed, and the results compiled and analyzed using SPSS statistical software package.

Results

A total of 100 persons were examined, 68 women and 32 men. The average age of study participants was 40 years, with ages ranging from 17 years to 78 years. Of those, 61% had back mice. There were no significant correlations with patients' age, sex, associated medical illnesses, or surgeries. There was no association with self-reported levels of daily activity, employment, and presence or absence of back pain. The only statistical difference was found in the use of nonsteroidal anti-inflammatory drugs (NSAIDs), the use of NSAIDs being inversely related to the presence of back mice. (Of 14 subjects taking NSAIDs, 35.7% had back mice, whereas of 86 not taking the drugs, 65.1% did [P=0.03647].)

Discussion

From this study of persons attending a family practice clinic, the presence of back mice is much more common than had been previously reported. Back mice were unrelated to any of the variables examined. The presence of back mice is apparently a benign, asymptomatic finding. This is supported by our finding that of the 12% of persons reporting no history of back pain, fully 66.7% had a palpable back mouse.

We propose a change in nomenclature, calling the benign asymptomatic fibrotic masses back mice

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and those which are tender or painful "back rats." Further research may reveal characteristics which differentiate back mice from back rats. ❑

Acknowledgment: We thank the research division of the Department of Family Medicine at ETSU for compiling the data. Special thanks to Daniel J. David, M.D. for his assistance in preparing the manuscript.

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April 1996

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29	30	NOTES				

Accelerated Progressive Massive Fibrosis and Mica Dust

NARAS K. BABAN, M.D.; WILLIAM M. DRALLE, M.D.; and THOMAS M. ROY, M.D.

Introduction

Pulmonary opacities larger than 1 to 3 cm as a complication of occupational exposure to mineral dust are termed progressive massive fibrosis (PMF). The diagnosis is most often suggested by the radiographic finding of bilateral, asymmetric opacities that involve the mid-upper and posterior lung fields of patients with a history of mining coal or exposure to respirable silicates.[1]

Mineral dust-associated mass lesions typically develop long after the patient has left the environment predisposing to the prolonged inhalation of particulates. Approximately two-thirds of individuals will first develop PMF after leaving their industry, which is implied by the descriptive adjective "progressive."

We present the case of a patient who developed progressive massive fibrosis after a nine-year exposure to mica dust in a factory environment, review the complex etiology of PMF, and emphasize how the latency of PMF requires a detailed history of a worker's job environment.

Case Presentation

A 53-year-old white man was admitted to the Mountain Home Veterans Administration Medical Center to evaluate bilateral pulmonary lesions of the upper lobes. These lesions were discovered on standard chest radiographs that were performed after the patient had a significant response to an intradermal PPD challenge. The patient denied cough, dyspnea, weight loss, night sweats, and fever. He denied orthopnea and paroxysmal nocturnal dyspnea. Although he had smoked one package of cigarettes daily since age 16, he considered himself to be active and in good health.

The patient had worked for nine years in a local manufacturing plant in North Carolina, where mica ore was mined, transported to the factory, and ground into a powder. He was exposed daily to the ground mica dust. He wore no protective respirator or mask. He had no other history of occupational exposure.

The patient was normally developed, with normal vital signs, and his physical examination was unremarkable, with particular attention paid to the cardiopulmonary systems.

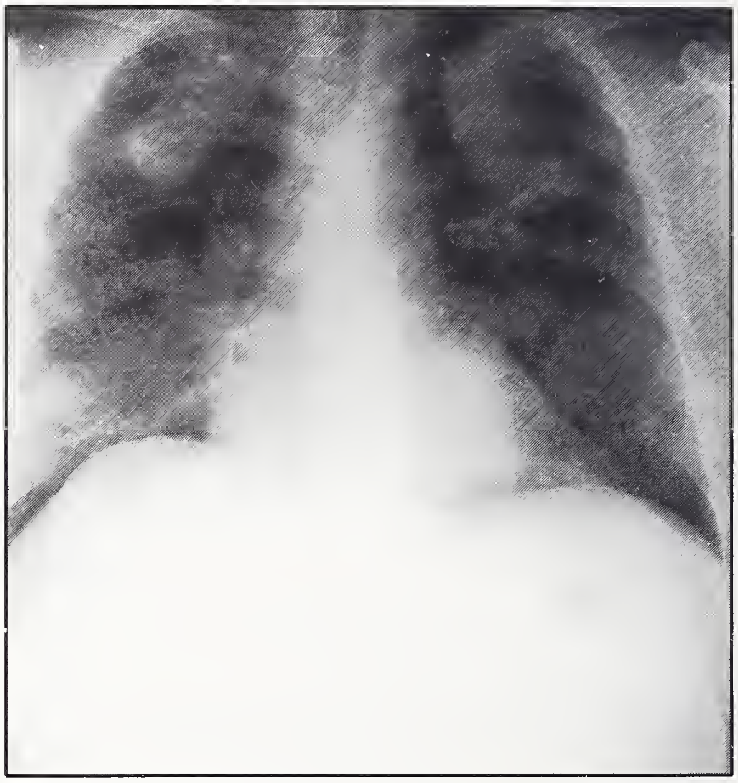

Figure 1. PA chest radiograph.

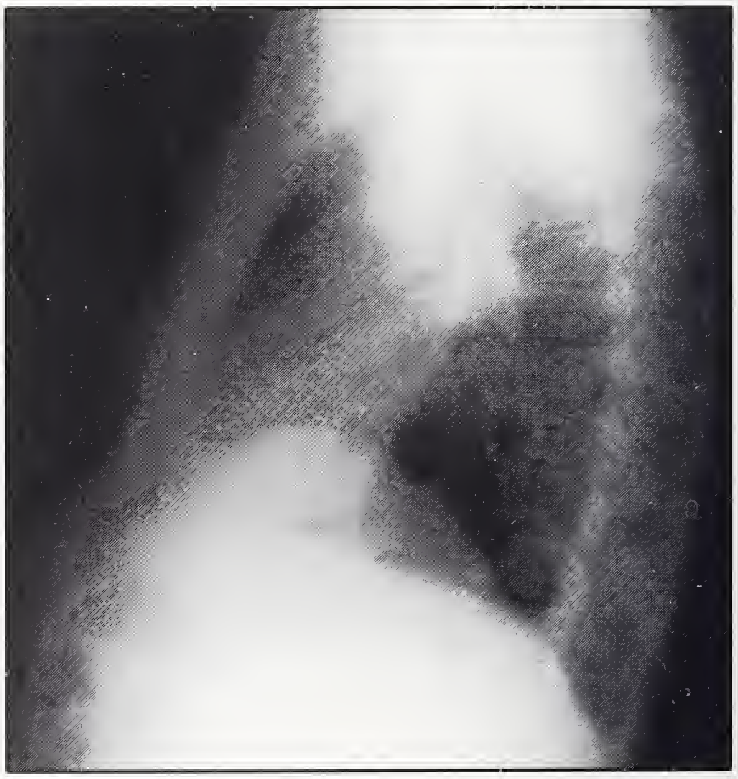

Figure 2. Lateral projection.

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There was no cyanosis, digital clubbing, or edema. Laboratory tests were normal, including electrocardiogram, fungal serology, and collagen vascular screens. Respiratory secretions were negative for both malignant cells and acid-fast organisms. PPD was recorded as 16 mm in duration. Pulmonary function tests showed that both FEV_1 and FVC were diminished in a pattern consistent with restrictive lung disease. The chest radiograph showed mass densities in the apices of both lungs, and increased interstitial markings were present in the bases (Figs. 1 and 2).

All investigative procedures were negative for pathogens and malignancy. Tomography demonstrated that each lesion contained dense calcification (Fig. 3). Based on the history of daily exposure to mica dust and exclusion of other diseases, the diagnosis of complicated pneumoconiosis with progressive massive fibrosis was made, and the patient was given INH prophylaxis for nine months. He has done well with close follow-up.

Discussion

Laborers in environments of respirable dust are likely to accumulate particulate matter in their lungs, and despite the normal mechanisms of mucociliary clearance, some individuals will develop a tissue reaction to this material. The type of reaction depends on whether the inhaled particles are organic or inorganic, but in either case, the initial insult is maintained by pulmonary macrophages that are activated to release proinflammatory mediators. Retained mineral dusts elicit an increase in cytokines and oxidants that may lead to fibrosis, with destruction of the parenchyma and the pulmonary vasculature.[2]

Interestingly, the degree of parenchymal reaction cannot be accurately predicted for an individual even when the dust burden can be approximated. Many of these workers will have normal chest films, while others with similar exposure develop multiple small rounded or irregular opacities on the radiograph, constituting simple pneumoconiosis. A minority of workers develops radiographic opacities larger than 1 cm, and are classified as having PMF.[3] The distinction between simple pneumoconiosis and PMF is clinically relevant, as the presence of PMF predicts significant impairment of respiratory mechanics and premature death.[4] For reasons that are unclear, once PMF has started it tends to proceed rapidly despite removal from dust exposure.

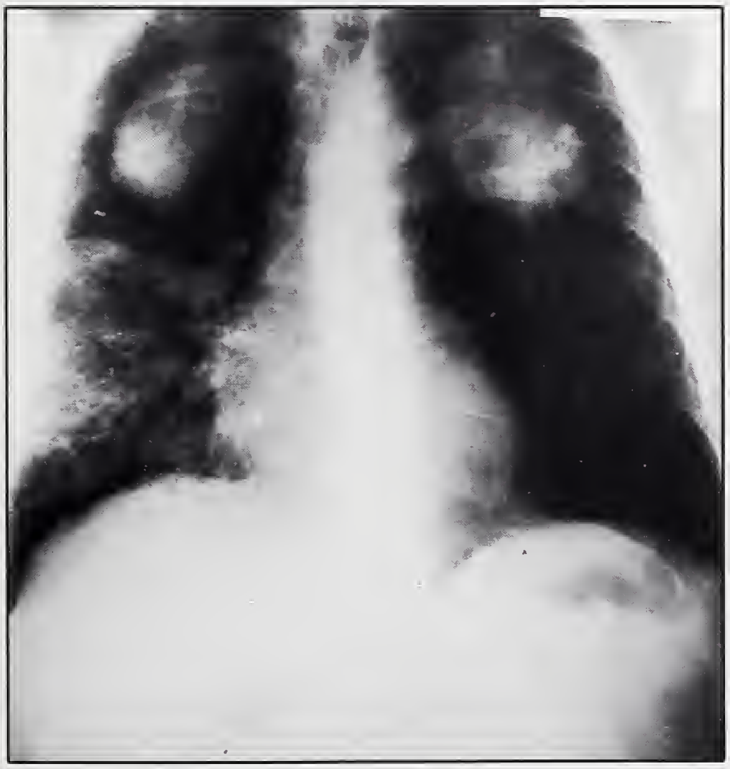

Figure 3. Tomogram of lesions.

PMF appears to require a critical combination of particle dose, mineral composition, and host predisposition. In our case, exposure to mica was critical. Mica is made up of hydrated groups of aluminum, potassium, and magnesium silicates. Its structure is characteristic of slate, and it can easily fracture into thin, respirable plates. The fibrogenic silicates of mica have been shown to irritate the bronchus and cause an industrial bronchitis. Though there are occasional reports of heavily exposed individuals who have developed pulmonary fibrosis or simple pneumoconiosis,[5] we are not aware of a medical report of the development of PMF.

An early premise regarding the pathogenesis of PMF invoked a mycobacterial infection superimposed upon a pulmonary parenchyma whose defenses were impaired by the presence of the mineral dust. This theory was based on the observation that massive fibrotic lesions could be induced in the lungs of guinea pigs by exposure to a mixture of coal dust and attenuated mycobacteria.[6] The lesions did not develop when the animals were exposed to either agent alone. This hypothesis is still mentioned in some texts despite the lack of any recent evidence to support a causal association using more sophisticated microbiologic techniques.[7]

The silica content of the mixed dust has been proposed as a critical factor in the development of PMF, and indeed PMF occurs more often in patients with classic silica exposure than in coal workers. Likewise, massive fibrotic lesions occur more often in miners of anthracite coal (high silica content) than in miners of bituminous coal (low silica content).[8]

On the other hand, pathologic studies often find little or no silica in the lungs of coal workers with PMF.[9] Inhaled silica-free carbon has been reported to cause PMF,[10] and talc (magnesium silicate) delivered to the lungs intravenously has also been associated with PMF.[11] Mica and kaolin are rare causes of pneumoconiosis, much less PMF.[5] Even repeated hemorrhage into the lung has been cited as causing PMF.[12] Though the nature of the mineral has some bearing on its development, it clearly is not the predisposing sole factor.

Another explanation for the differences seen in the degree of reaction to respirable dust is based on the presence of heightened immunologic reactivity in certain hosts. This avenue of research was suggested by Caplan's observation of nodular masses on the chest radiographs of miners with rheumatoid arthritis.[13] Early investigations confirmed a high prevalence of antinuclear antibody and rheumatoid factor in miners with evidence of PMF. Recent efforts to test this hypothesis conducted with more refined assays confirm a greater prevalence of autoantibodies in subjects with pneumoconiosis than in control subjects.[14] This observation suggests that production of immunoglobulin-reactive antibodies may influence the development of simple pneumoconiosis, but no further significant serologic differences could be established between subjects with simple pneumoconiosis and those with PMF.[15]

Suggestion of genetic predisposition to development of PMF also centers on confirmation of heightened response of alveolar macrophages to nonspecific stimuli in patients with PMF compared with individuals with simple coal workers pneumoconiosis.[16] Platelet-derived growth factor (PDGF) and type I insulin-like growth factor (IGF-I) promote fibroblast proliferation, but another cytokine, type B transforming growth factor (TGF-B), has a protective effect. This factor is found in high levels in patients with simple pneumoconiosis but in low levels in patients with PMF. The loss of this protective effect may be genetically determined.[17]

There is some evidence that mica-induced pulmonary fibrosis differs in behavior from the fibrosis associated with classic silicosis.[18] Whereas silica is preferentially sequestered in the bronchial mucosa, the silicates of mica are preferentially sequestered in the pulmonary parenchyma,[19] which may explain our patient's massive lesions after only nine years' exposure, whereas chronic silicosis generally appears only after a 15- to 20-year exposure. The nuances of the pulmonary lesion caused by mica are further illustrated by the dense calcifications seen in the tomograms of the lesions, a feature that is considered rare in pure silicosis.[20]

Continued studies will be needed to identify additional features that enhance or inhibit the PMF process. Until these can be defined, only supportive treatment can be offered. Special attention must be provided to protect against pulmonary infection by proper immunization against influenza and the pneumococcus. A positive PPD skin test would warrant INH prophylaxis if active disease is ruled out. ☐

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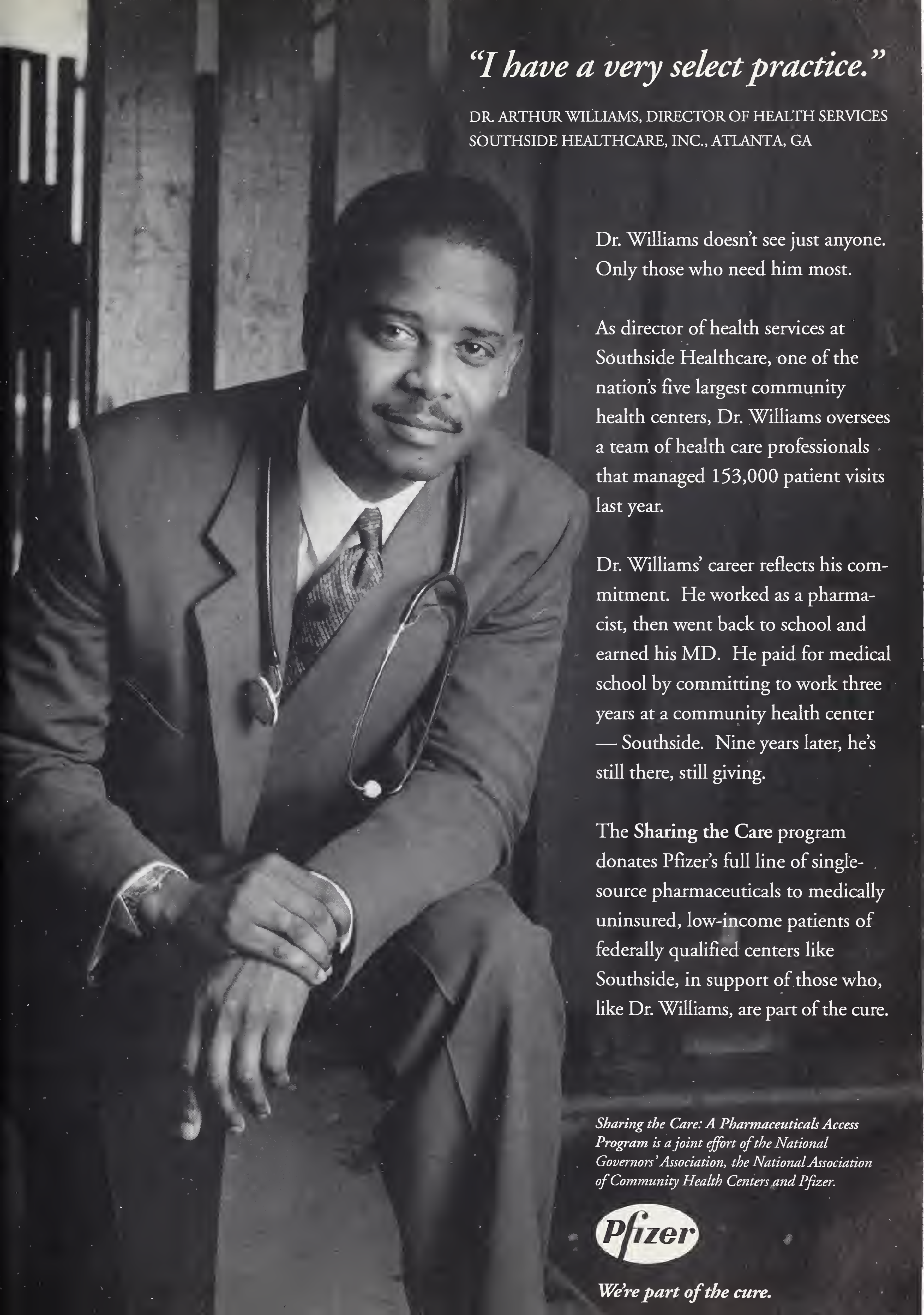

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Vanderbilt Morning Report

A Man With Fever and Arthralgias

Case Report

A 38-year-old man was in his usual state of good health until three days prior to admission when he developed pain and stiffness in his right fifth digit. This progressed to involve his hand, both wrists, left ankle, and right knee, and he was unable to bear weight. He went to a local emergency room, where evaluation revealed a WBC count of 15,000/cu mm. He was discharged on a nonsteroidal anti-inflammatory agent. One day prior to admission, his wife noted a rash on his body, accompanied by higher fever and a sore throat, prompting a return to the hospital.

The patient denied any recent extramarital sexual contact or symptoms of urethritis. He had cared for a son with pharyngitis in the past month. He also reported numerous tick exposures while fishing. He was admitted and treated with intravenous tetracycline to cover possible tick-borne illness. Because of persistent fever, rash, and polyarthritis, the patient was transferred to St. Thomas Hospital for further evaluation.

Physical examination revealed a man in moderate pain, with a temperature was 101.2°F and heart rate of 106/min. Other vital signs were normal. His neck was supple, without meningismus, there were no abnormal lymph nodes, his lungs were clear, and the cardiac examination was normal. On the skin of his trunk, back, and inner thighs was a pink rash that blanched. In some areas, the rash had serpiginous margins with central clearing, but there were no vesicular lesions or petechiae. Musculoskeletal examination revealed a large effusion of the right knee, as well as swelling and erythema of both ankles and some joints of his hands. Range of motion was diminished due to severe pain.

Admission laboratory studies revealed a WBC count of 15,000/cu mm, hematocrit 36%, platelet count 295,000/cu mm, and ESR 104 mm/hr. The electrocardiogram was normal. Arthrocentesis of the right knee yielded fluid with a WBC count of 57,000/cu mm (92% segmented neutrophils), no crystals, and no organisms. Antistreptolysin O (ASO) titer was positive at 333 TODD units. Antinuclear antibody (ANA) and rheumatoid factor (RF) were negative. Cultures of material from the throat, blood, and synovial fluid remained negative.

The patient was treated with high-dose aspirin and antibiotics for acute rheumatic fever. When the arthritis persisted after 48 hours, prednisone was administered, with marked diminution of the pain and inflammation. He was discharged five days after admission receiving prednisone and oral antibiotics to complete a 14-day course.

Discussion

For many doctors today, especially those close to their training, the differential diagnosis prompted by fever and arthritis does not always include acute rheumatic fever (ARF). Even if rheumatic fever is on the list, it is considered very unlikely. Rheumatic fever still exists, however, and in recent years a number of U.S. cities, including Nashville, reported a resurgence of the disease. It is useful, therefore, to reacquaint oneself with its diagnostic criteria and clinical manifestations.[1]

Rheumatic fever is a multisystem inflammatory disease that occurs as a sequel to frequently unrecognized or untreated group A streptococcal pharyngitis.[2] The period between pharyngitis and the onset of symptoms is about 20 days (range one to five weeks). At least one-third of patients have no recollection of pharyngitis.[1] Since there is no laboratory test specific for ARF, the diagnosis is based upon clinical features. In 1992, the American Heart Association published the updated Jones' Criteria (Table 1). To make the diagnosis of ARF, a patient must have two of the major, or one major and two minor, manifestations. Antecedent group A streptococcal infection should be documented if possible.[3]

In children, rheumatic fever usually has cardiac involvement, but in adults, polyarthritis and fever are the dominant features.[4,5] Classically, the arthritis was described as migratory, but many adults have a rapidly additive involvement that resembles other forms of reactive arthritis.[5] The arthritis predominantly affects large joints but can affect almost any joint, including those of the hands and feet, as in this patient. Joint involvement is exudative, not proliferative, so healing leaves no deformity or scarring.[4] Sydenham's chorea and subcutaneous nodules are rare findings in adults.[1]

Though arthritis is the most common manifestation in adults, carditis is the most serious, causing most of the morbidity and mortality associated with both acute and chronic phases of the disease. The effect of recent advances in Doppler echocardiography for the diagnosis of carditis needs to be evaluated. When using the classic criteria for carditis (a new murmur or aortic or mitral insufficiency, increasing heart size on chest radiograph, or a pericardial friction rub), the incidence of carditis is about 50% to 60% overall. In an outbreak in

TABLE 1

MANIFESTATIONS OF ACUTE RHEUMATIC FEVER

Major Manifestations	Minor Manifestations	Supporting Evidence
Carditis	Clinical:	Positive throat culture (group A streptococcus)
Polyarthritis	Arthralgias	
Erythema marginatum	Fever	Elevated or rising ASO titer
Chorea	Laboratory findings:	
Subcutaneous nodules	Accelerated ESR	
	Elevated C-reactive protein	
	Prolonged P-R interval on EKG	

Presented by Karen Atkinson, M.D., chief medical resident, St. Thomas Hospital, and Bruce Usher, M.D., Medical Resident, Vanderbilt University Medical Center, Nashville.

Utah, the reported incidence of carditis was 91%, but this included patients without murmurs, the cardiac involvement having been determined by Doppler echocardiography. It is unclear whether patients without clinical carditis develop subsequent rheumatic heart disease.[1]

Erythema marginatum is an evanescent pink rash characteristic of ARF. The erythematous areas vary in size and usually occur on the trunk and proximal part of the extremities. There is often central clearing and serpiginous margins. The rash is non-pruritic, transient, and migratory, and blanches with pressure.

Once diagnosed, ARF is treated with bed rest, antibiotics, and salicylates. Penicillin is used to eradicate the streptococcal infection. Salicylates reduce the fever and relieve joint pain. Adults often do not show the dramatic response to salicylates that children do; therefore, corticosteroids should be employed if the patient does not improve rather quickly on aspirin.[5]

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Sustained Monomorphic Ventricular Tachycardia: A Case of Cardiac Sarcoidosis

Case Report

A 42-year-old black man with a previous diagnosis of cardiomyopathy, possibly due to alcohol, and a recent episode of sustained monomorphic ventricular tachycardia (VT) was transferred to the Nashville VA Medical Center for further evaluation.

He first presented himself to medical attention in 1987 with progressive dyspnea on exertion, cervical lymphadenopathy, and a nodular skin rash. Radiographic examination of the chest was normal. Tests of pulmonary function revealed mild restrictive lung disease with an angiotensin converting enzyme (ACE) level of 100 U/L (normal range 8-56). A lymph node biopsy showed changes "consistent with sarcoidosis." He was treated with prednisone, 30 mg/day. Coronary angiography done in June of 1994 revealed no significant coronary artery disease. An echocardiogram revealed a dilated, diffusely hypokinetic left ventricle with an ejection fraction of 20%. Another ACE level was 40 U/L. The prednisone was discontinued, and treatment with quinapril and furosemide was begun. On May 5, 1995, he presented himself to a community hospital with New York Heart Association (NYHA) class 3 congestive heart failure, dizziness, syncope, and new third degree AV block. A dual chamber pacemaker relieved the dizziness and congestive heart failure to NYHA class 1. He again presented himself to the community hospital on May 18, 1995 with the sudden onset of chest pain, dyspnea, and diaphoresis. The EKG revealed sustained monomorphic VT (205/min) requiring electrical cardioversion. He was transferred to the Nashville VA Medical Center receiving lidocaine intravenously.

On arrival his condition was stable, with a normal sinus rhythm. He stated that he had consumed a fifth of whiskey per day from 1982 to 1987, but since then had abstained. He denied any drug use. Physical examination showed a temperature of 37°C, blood pressure 110/60 mm Hg, heart rate 60/min, and respiratory rate 16/min. The only remarkable physical finding was a PMI 2 cm to the left of the midclavicular line. Laboratory data revealed a BUN of 30 mg/dl, creatinine 1.6 mg/dl, sedimentation rate 4 mm/hr, and ACE level <1 U/L. The EKG revealed a third degree AV block with inappropriate atrial lead sensing and capture but appropriate ventricular lead function. Review of previous EKGs revealed progressive AV block (1992—first degree AV block; August 1994—new right bundle branch block; May 1995—new third degree AV block).

Tests of pulmonary function, radiograph of the chest, and echocardiogram were unchanged. Review of the lymph node biopsy done in 1987 showed the previously reported noncaseating granulomata.

A diagnosis of cardiac sarcoidosis was made, for which he was treated with prednisone, 1 mg/kg/day. Electrophysiologic testing did not induce VT. Treatment with amiodarone was begun, with revision of the atrial lead. After several days of observation while receiving amiodarone, there was no recurrent ventricular arrhythmia, and he was discharged.

Discussion

Sarcoidosis is a multisystem, granulomatous disease of unknown etiology characterized by involvement of the eye, skin, lung, reticuloendothelial system, and the heart. Histologically it is characterized by the presence of noncaseating granulomata. Myocardial involvement occurs in approximately 25% of patients with sarcoidosis,[1] most of whom have little if any extracardiac disease. Granulomata may involve the left ventricular free wall, septum, right ventricle, papillary muscles, right and left atria, and pericardium. There is a special predilection for the conducting system.[2]

The clinical manifestations of cardiac involvement may include congestive heart failure, atrial and ventricular arrhythmias, sudden cardiac death, varying degrees of AV and bundle branch block, and pericarditis. Ventricular tachycardia (VT) is a frequent major arrhythmia and may occur in up to 20% of cases.[2] Though this can be due to focal conduction sys-

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Presented by Mark A. Zenker, M.D., chief medical resident, Nashville VA Medical Center.

tem involvement, it typically represents extensive myocardial granulomata and scarring.

The diagnosis of cardiac sarcoidosis must be vigorously pursued since a premortem diagnosis is made in fewer than 50% of patients.[1] Several studies such as radiograph of the chest, tests of pulmonary function, echocardiography, EKG, gallium scanning, ACE level, and the Kveim-Siltzbach test may be useful. Endomyocardial biopsy is definitive but is only 25% to 50% sensitive due to the inherent patchy involvement. This procedure also carries significant morbidity and mortality.[2] The ACE level may be helpful in following the course of sarcoidosis, but it has a positive and negative predictive value of only 75% to 90% and 70% to 80% respectively.[3] In this particular patient, the initial ACE level was elevated before prednisone therapy. The ACE level of <1 U/L during his last admission did not exclude the diagnosis of progressive cardiac sarcoidosis because this level can be falsely lowered by ACE inhibitor therapy.[4]

In this particular case, the diagnosis of cardiac sarcoidosis was made by identifying noncaseating granulomata in a prior lymph node biopsy specimen, a dilated cardiomyopathy, progressive conductive system disease, and VT. The presumed diagnosis of "alcoholic cardiomyopathy" seems very unlikely, as that condition characteristically improves or resolves with abstinence from alcohol and rarely has associated conduction system disease and VT.[5]

The treatment of cardiac sarcoidosis should include standard measures, such as antiarrhythmic therapy, pacemaker placement, diuretics, and ACE inhibitors as needed. The use of steroids is somewhat controversial due to the lack of randomized, double-blind, placebo-controlled trials. There are, however, several case reports in the literature of reversal or improvement in congestive heart failure, conduction disease, and VT with high-dose prednisone (1 mg/kg/day).[6] Treatment should be extended and probably life-long.

The prognosis of cardiac sarcoidosis is variable, but survival after onset of symptoms can be as short as one to two years. Due to this dismal outlook, a high index of suspicion is required for early diagnosis, since some data show that a better prognosis can be achieved with early steroid treatment.[3] ❑

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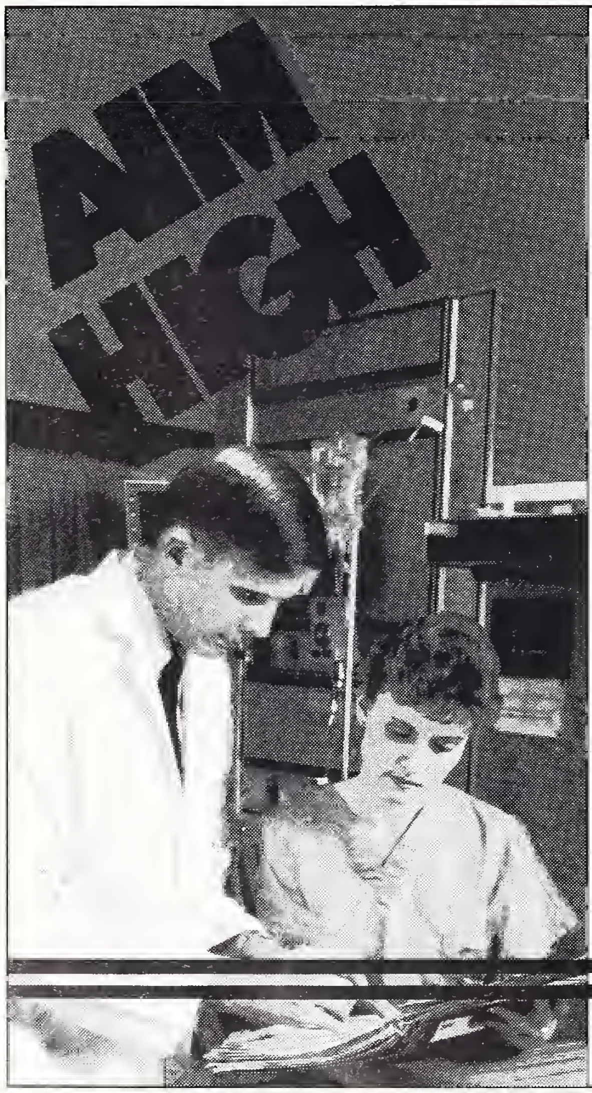

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Loss Prevention Case of the Month

Delay Is Deadly

J. KELLEY AVERY, M.D.

Case Report

A 2-year-old girl was brought to the emergency department (ED) of a rural community hospital with a history of fever 102°F to 103°F (axillary) for the past ten hours. The fever was controlled to some extent by "suppositories," the last one about $1^1/_2$ hours prior to arrival in the ED. The mother reported the child pulling at her ears. Evaluation by the ED physician within five minutes of arrival noted moderate nasal secretions (character not described), and rhonchi were noted in both lung fields on auscultation. It was noted that the child's tetanus immunizations were not up to date. The temperature was recorded at 100.3°F, pulse 104/min, respirations 35/min, and weight 30 lb. The remaining physical examination was within normal limits except for the "runny crusty nose," a dull red right tympanic membrane, and a croupy cough. She was discharged from the ED in "satisfactory" condition about 25 minutes after admission receiving a broad-spectrum antibiotic. The mother was instructed to "push fluids, give Tylenol for fever, and make arrangements to see her primary care physician (PCP) in three to four weeks" to check on the ear.

The following day, the mother brought her little girl back to the ED. The same physician that the patient had seen the day before was on duty, and he saw her about 40 minutes after her arrival. The admission note recorded that the patient was taking the antibiotic prescribed 24 hours before, but other symptoms had developed. The baby had had some kind of "fit" about one hour before her return visit. The mother said that the child's eyes "rolled back," she was "walking funny," and looked "strange out of her eyes." She described a decreased level of consciousness or an outright loss of consciousness for about five minutes. At that time her temperature was 103°F axillary.

The ED physician believed that if there had indeed been a true seizure, it was likely due to the fever unless it was a "shaking chill." The physical examination again showed the red ear. The note said "Supple neck, heart, lungs, and abdomen negative. Skin—no rash, generally pale." The chest x-ray was negative and the CBC revealed a WBC count of 23,200/cu mm with 93% neutrophils, 23% of which were band cells. Two and one-half hours after arrival in the ED the temperature was recorded at 100.2°F and the laboratory/x-ray studies were complete.

The ED physician reported to PCP #2 who was on call for PCP #1, and was instructed to admit the child for observation. The ED physician discharged the child from the ED and wrote admitting orders for admission to observation status. These orders included diet, an increased dose of the same antibiotic that had been started the day before, neurologic checks every two hours, Tylenol for fever, and CBC/urinalysis in AM. The observations on the ED record were repeated as the admission note with the added fact that the physician had consulted with on call PCP #2.

The nursing assessment on admission was that the child responded to her name, was agitated and unable to be still, and showed no current seizure activity, though the assessment was made about seven hours after the patient's arrival in the ED. An hour later the fever was again up to 102.3°F rectal, with a pulse of 138/min, and respirations 28/min. The laboratory findings were reported to PCP #2 and additional orders were given for blood cultures and I.V. fluids, and the broad-spectrum antibiotic was changed to I.V. ceftriaxone 500 mg every 12 hours. Forty-five minutes later the nurse noted seizure activity. The pupils were unequal, the right eye deviating inward, and the left pupil reacted to light while the right was nonreactive. The doctor was called.

PCP #1 (the child's regular physician) was in the hospital making rounds about 10 PM and was notified about his patient. PCP #2 apparently had failed to notify PCP #1 of his patient's admission. Seizure activity continued, and control was difficult. A lumbar puncture yielded cloudy fluid, with a markedly elevated spinal fluid protein and decreased glucose, and both white and red blood cells were present in the fluid. Gram stain showed numerous gram-positive cocci compatible with *Staphylococcus pneumoniae*, and cultures of both CSF and blood were positive for the same organism.

The patient was transferred to a medical center's children's hospital, where the infection and the seizure activity were controlled with difficulty. Severe CNS damage was confirmed, and months in a rehabilitation facility gave little CNS improvement.

A lawsuit was filed charging the ED physician and PCP #2 with negligence in the delay in diagnosing the meningitis, failure to recognize the emergency nature of the condition, and failing to follow the accepted procedures to rule in or out meningitis. It was alleged that this failure was the cause of the resulting brain damage.

Loss Prevention Comments

Since the advent of antibiotic therapy, it has been recognized and reported that the earlier the diagnosis of meningitis is made the greater the chance that CNS damage can be mitigated. It is also well recognized that in some cases there is significant CNS damage even when the diagnosis is made early and treatment begun promptly. The experience coming from medical malpractice action across the country indicates that when an aggressive approach to the diagnosis and treatment of this condition is documented in the clinical record, the physicians have a good chance of being defended successfully regardless of the sequelae. It is of course

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Dr. Avery is chairman of the Loss Prevention Committee, State Volunteer Mutual Insurance Company, Brentwood.

The Case of the Month is taken from actual Tennessee closed claims. An attempt is made to fictionalize the material in order to make it less easy to identify. If you recognize your own case, please be assured that it is presented solely for the purpose of emphasizing the issues presented.

true that in these cases, particularly those involving infants and children, there is a great "sympathy factor" to be considered when deciding how to manage the defense of the physicians involved.

In this case, the physicians exposed themselves to criticism in a number of ways. The ED physician took it upon himself to write the admission orders for this child, which, in effect, took him out of the strict emergency role and placed him in the role of patient management. It is seldom if ever a good idea for the ED physician to write the admission orders. If the attending physician, or, as in this case, the physician on call, orders admission without actually coming into the ED to deal directly with the patient, the ED physician probably should ask the attending physician to dictate the admission orders to a nurse. This is not always easy to do. Where the relationship between the attending physician and the ED physician is one of long duration and trust, the attending physician recognizes that his colleague is at the bedside making direct observations, and from that perspective might be more able to write the appropriate orders than the attending physician who is not at the bedside. Still, in any event the ED physician should be very careful about writing admission orders. In this case, apart from the admitting orders and the responsibilities that go with it, there is considerable doubt that the ED physician would have been sued.

What are the consequences of writing the admission orders in this case? The most glaring deficiency is the failure of the ED physician to make sure that the attending physician was promptly notified and assumed the responsibility of hands-on patient management from the outset. Because that was not done in this case, the ED physician became responsible along with the doctor on call.

Here, in addition, the physician on call failed to promptly notify the attending physician. Even when he was in the hospital making rounds there is doubt that he was aware of the patient's admission. In this case, PCP #2 should have been more in evidence in the management of this child from the time of the second ED visit until care was turned over to PCP #1.

It should be noted that less than 48 hours elapsed between the initial ED examination and the intractable seizure activity that led to the spinal tap and the true diagnosis. It should be further noted that the documented ED admission clearly included the thought of possible meningitis. Neurologic checks were ordered, and there was the specific note that "neck was supple." It was the delay in the notification of PCP #1 by PCP #2 and the written orders of the ED physician that brought on the lawsuit involving only those two doctors. This case had to be settled because of these deviations from good practice and because of the tremendous sympathy factor that is always present when within a short time a previously healthy child becomes permanently disabled. ☐

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Who's Afraid of the Big Bad Wolf?

KERRY GATELEY, M.D., M.P.H.

The story of "The Three Little Pigs" has a moral about prevention and preparedness that can be aptly applied to public health. But the modern "wolf," huffing and puffing just outside the door, is infectious disease.

Encouraged by the dramatic progress made through antibiotics and vaccines, many thought that all infectious diseases would soon be extinct. The eradication of smallpox and the decline of polio and other vaccine-preventable diseases lulled us into complacency. Busy parents let immunization schedules slide. Health professionals turned their attention to chronic illnesses such as cancer and heart disease. Taxpayers and elected officials shifted their priorities from disease prevention to crime and other concerns. Public health watchdogs were called off, so that early warning systems of disease surveillance are not up to speed. Laboratories were allowed to languish, so that our ability to identify and respond quickly to disease threats is compromised.

This complacency has had unfortunate consequences. Like the piglets who built their houses of straw and twigs, we are inadequately prepared to protect ourselves from reemerging diseases such as tuberculosis, much less from newly emerging threats like Lyme disease, *Escherichia coli,* hantavirus, or necrotizing fasciitis.

Antibiotics, the former "miracle drugs" against infectious diseases, have been overused to the extent that organisms causing such diseases as tuberculosis and gonorrhea have become drug-resistant. Even common childhood ear infections have become more difficult to cure.

Infectious diseases remain the leading cause of death worldwide. The indiscriminate, massive use of antibiotics to treat human pneumococcal infections, plus the antibiotics that find their way into milk from their use in dairy cattle, have toughened the disease-causing organisms and lessened the drugs' effectiveness. As in the United States at large, HIV infection, pneumonia, and influenza are among the top ten killers in Tennessee. As a result of reduced immunization efforts, even measles continues to threaten the health of Tennessee children and young adults.

New, reemerging, and drug-resistant diseases all pose immediate and very real health threats in this state. HIV, increasingly transmitted in the heterosexual community, infects an estimated range of between 11,000 to 14,000 Tennesseans. As of the end of April 1995, 4,887 Tennesseans have been diagnosed with AIDS and 2,519 of them have died. In addition, TB in the HIV-infected community has nearly doubled. In 1992, 23 cases of TB/HIV were reported and 40 cases were reported in 1994.

Major measles outbreaks in 1989 and 1990 resulted in 239 cases. In addition, 352 cases of mumps were reported between 1989 and 1993, as well as 312 cases of pertussis (whooping cough) during the same period.

These statistics are a testament to the present and continuing need for vigilance against infectious diseases through disease reporting and surveillance, modern and well-staffed laboratories, and immunization promotion. Such vigilance requires investing in a strong public health infrastructure.

To maintain, much less improve, the health of Tennesseans, we must invest in a public health framework strong enough to keep the wolves of infectious disease from our door. Lawmakers who are crafting health care reform packages would do well to follow the example of the third piglet who, acknowledging the wolf, took the time and expense to build a sturdy, safe house. ❑

From the Tennessee Department of Health, Nashville. Dr. Gateley was Director of Communicable Disease Control at TDH. Since this article was written, Dr. Gateley has relocated to TennCare in the Department of Finance and Administration.

Adapted from an article by David R. Smith, M.D., entitled Porches, Politics, and Public Health, published in the *American Journal of Public Health* (84:725, May 1994).

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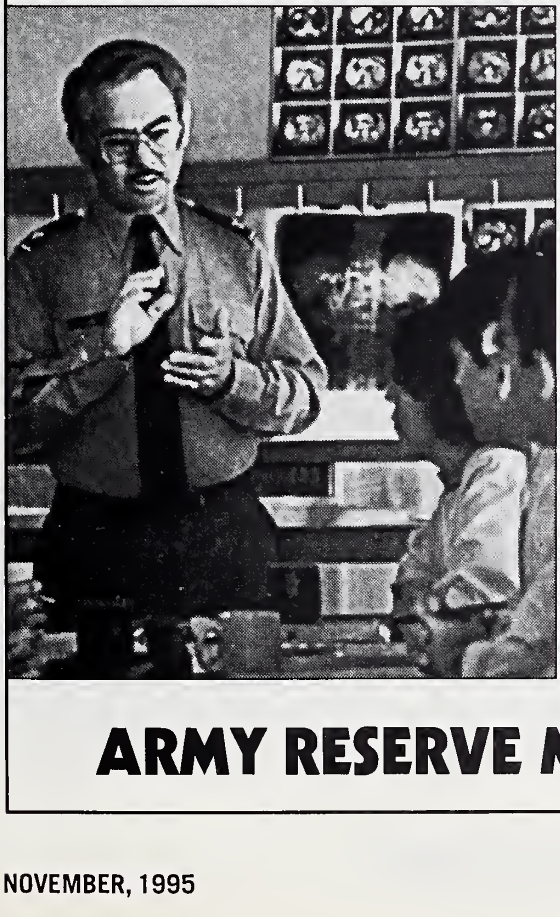

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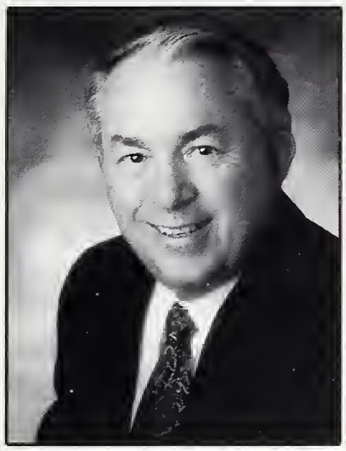

ROBERT E. BOWERS

For the Children

October has been designated Domestic Violence Awareness Month. In April, the Tennessee Medical Association chose domestic violence as our focal issue for the year. While there are certainly more pleasant topics to address, domestic violence is a growing phenomenon that commands our attention.

We usually think of domestic violence as being a spousal issue, and as such, adults take a measure of responsibility for the dynamics of their relationships. We assume that adults who are in violent situations can seek appropriate help and care if such help and care is made available to them. But domestic violence is not just a spousal issue. Every day in our state *children* are violently abused by members of their own families. The damage inflicted is not only physical, but psychological and emotional as well. And while the outer scars may heal, the emotional ones never do. Statistics show that abused children often grow up to be abusers themselves, making domestic violence a multigenerational tragedy.

Some might argue that domestic violence is a social issue, not a medical one. True, it is a social issue; but it becomes a medical issue when the victims of domestic violence show up in emergency rooms and in our examining rooms. That is also when it becomes our opportunity to make a difference.

As physicians, we have not only an ethical obligation, but a legal duty, to notify the appropriate authorities in cases where we suspect domestic violence. And statistically, if we see a woman who is being abused, chances are very good that her children are being abused as well.

We begin to make a difference when the victim of domestic violence trusts us enough to let us in on her "shameful secret." At that point, we have an opportunity not only to treat the physical damage, but to relay valuable information to the victim that can make a real difference in her life and the lives of her children.

The TMA has provided all Tennessee physicians with resource materials on how to recognize the symptoms of domestic violence, how to speak to a victim of abuse, and where to send the victim for help in removing herself and her children out of an abusive situation.

Speak up, get involved, don't be afraid to question a suspected victim. You could be a true lifesaver for the victim—and for the *children.* If you make a positive difference for the children of today, you are making a positive difference for our world tomorrow.

Robert Bowers

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NOVEMBER, 1995

editorials

Managed Care Revisited

I have a firm belief, which I know a lot of you share, that the so-called bottom line is what is driving health care these days in the United States, and maybe in the rest of the developed world, too, since for a variety of reasons medical care has become exceedingly expensive, especially if it is properly administered—and by administered I don't mean what administrators do. I mean what doctors and nurses do. Whereas it used to be the welfare and the comfort of the patient that dictated how that care was to be administered, a decision that for the most part was made by the patient's doctor, with a certain amount of input from the patient, nowadays what constitutes proper medical care is not a medical but a business decision, made by bean counters and administered (this time what administrators and not what doctors do) by ribbon clerks and functionaries.

So-called consumer advocates, especially and originally Ralph Nader, began some years back pontificating that health care is too important to be left in the hands of doctors, since doctors have, they claimed, a vested interest in it. The vested interest that doctors have, or at least have traditionally had, is to keep their patients well and comfortable. Mr. Nader's notion, I presume, is that the doctors' interest is to keep the money tree bearing fruit. The consumer advocates' interest, of course, is always purely altruistic.

The primary interest of most third party payers is not, disclaimers to the contrary notwithstanding, the comfort of the patient at all, and it is not, in fact, even a consideration. Moreover, too often patient welfare is a consideration only to the extent that the patient's condition not be worsened by the care provided, thereby resulting in additional costs instead of less. The goals of the third party payors are easier to effect if any relationship between the doctor and his patient that would enhance patient advocacy can be obviated. The patient has consequently been lost in the shuffle, often being treated (as opposed to cared for) by one unfamiliar doctor after another. Worse yet for both the patient and our profession is that this loss of relationship is often abetted by the very ones who should be looking out for the patients' welfare—their doctors, who all too often are "not on call" when they are needed. If you follow our Loss Prevention column, you may have noticed how frequently litigation results from treatment by one or more doctors unfamiliar with the case.

During a recent panel discussion of managed care aired on PBS it became apparent to me that the patient has few friends in the health care arena these days. Despite the copious mouthing of platitudes by some of the doctors on the panel, there was too little evidence of empathy there, which is odd on the face of it, since any one of the discussants could at any moment find the roles suddenly reversed and himself a non-entity on a gurney in some ER. Despite recognizing that panels have moderators and not MCs, I have to say that this panel was moderated by a professor in the Harvard Law School who was an MC in the finest (likely not the most appropriate word) tradition, treating the proceedings with the characteristic comic flair of a self-assured trial lawyer working a jury. The proceedings were entertaining, and doubtless held the attention of the audience, but I thought the atmosphere in deplorable taste, considering that the title of the program was "Your Money and Your Life," neither of which is something to be trifled with.

With the exception of a single doctor, all of the panel had clear dollar signs in their eyes. I do not wish to be misunderstood as implying that everyone on the panel, or even any one of them necessarily, was overcome with avarice, but simply that throughout the discussion it became apparent, to me at least, that cost was uppermost in everybody's mind, often to the detriment of high-quality patient care. I have had my differences over the years with Arnold Relman, M.D., Editor Emeritus of the *New England Journal of Medicine*, and our views have been quite far apart on many issues, but for my money his vision of managed care is very clear. The most perceptive statement I heard all evening was his, that the cost of medical care is not borne by the third party payers, and it is not borne by the employers. It is borne by the individual taxpayer. He also took issue with Richard Scott, CEO of Columbia/HCA, who had made reference to the health care "industry." Dr. Relman opined that he always considered health care a social service. (I might have used a different term, but the difference would be picayune.) Like business generally, and the federal government, Mr. Scott has come to think of patients as consumers and doctors as providers of a commodity. That is one of the chief problems with the whole system. Mr. Scott has simply confused health care with what hospitals do, and that has become an industry. Hospitals, despite what their CEOs and administrative staffs apparently like to think, are not providers of health care. Hospitals are simply among the places where health care is provided by doctors and nurses.

The preconceived notions of mine that the patient has at least four implacable, and on occasion even mortal, enemies and precious few friends in the health care field were simply reinforced by the panel. The enemies are the insurance industry, which I think is likely public health enemy number one; the purchasers of health care plans, by which I mean largely business; the executive branch of the federal government, which is responsible for the various governmental agencies; and the hospital industry, not necessarily in that order. I did not specify HMOs and such because they are simply minions of one or more of the four, and do the bidding of their owners, which is first to tend the money tree and make it grow. The only friends of the patient I can see out there right now are the individual doctors who are willing, in the face of sometimes enormous difficulties and pressures, to go head to head against those enemies of good medical care in defense of their patients.

In case you are wondering where the legislative branch of government and organized medicine fit in, so am I. At the national level, both are necessarily unpredictable and opportunistic, since both represent constituencies with many viewpoints that are often disparate. Except that the AMA House is not divided along distinct party lines, or at least not two party lines, and the subject matter is different, or at least somewhat different, debate on each floor is quite similar—occasionally acrimonious and noncollegial, and generally without consensus. The venue would often be more or less indistinguishable to a casual observer. Any individual, therefore, physician or patient, might find each of those entities either friendly or unfriendly, depending on the circumstances. That is why a physician might think his specialty organization to be reflecting his own views more closely, though they may actually not be. It would be a mistake to view either umbrella as dispensable, even when they appear totally self-serving and likely to make a mess of things as they diddle with the system.

The two political parties I dismiss with a word: They are two peas in a pod. Neither is friendly to either patients or doctors, and one is no more or less friendly than the other. The Democrats want what the Administration wants, which is to cut health care spending—theirs. The GOP wants what big business wants, which is to cut health care spending—theirs. Either way, you and your patients lose. HMOs are the darling of both. As to your politics, then, you need to work on individuals, and pick your party on other grounds than medicine.

The consequence of all this is that the individual patient may find himself, or at least perceive himself, which for practical purposes is the same thing, awash and friendless in enemy waters without hope of succor. This should be the point at which his doctor comes in to offer a beacon to guide his patient through the shoals. Without an established doctor-patient relationship, the patient may be lost indeed.

Nevertheless, we need to be careful that in our enthusiasm for this relationship we not compound the problem by insisting on maintaining a relationship that has soured, as some of the larger medical groups are allegedly doing. I have heard tell that on occasion their administrative personnel have not allowed patients to switch doctors within the group. Such a decision is arbitrary, unkind, and unnecessary, and I should hope a policy set by the administrators and not the doctors. It is of course perfectly legal, but then not everything that is legal is ethical, and this is one of them, or so I think. That is the HMO mentality, and has no place in the practice of medicine, which is what a medical group is supposedly doing. You might check your own out if you think the shoe might fit.

Sometimes as I look around me at the way doctors are behaving I can't help recalling the words of the Okefenokee philosopher Pogo, who opined, "We has met the enemy, and he is us." Let it be not so!

J.B.T.

The First Time Ever, or, Remembrances of Things Seen and Unseen

> The world is so full of wonderful things
> I'm sure we should all be as happy as kings.
>
> —Mother Goose (I think)

The first time I saw Half Dome I was overwhelmed. It was a long time ago. If I cared, I could find out how long. I didn't even see it on the hoof, but in a collection of photographs, and black and white ones at that, by the famous photographer Ansel Adams, who spent most of his life trying to capture the essence of the Sierra Nevada, and particularly the Yosemite Valley, on film. I could look in the book and find out when it was published, and work from there if it mattered. It doesn't. The photograph "Moon Over Half Dome" was the culmination of years of patient watching and waiting. Mr. Adams could have saved himself the trouble had he chosen to fake it, as many would have done, and have. He didn't. What I need to report here is that the first time ever I saw Half Dome was nothing more than a prelude. Sometimes there is never to be anything more. With Half Dome and me, happily there was.

Though I guess everything in Nature is unique, since no two natural objects are exact duplicates, Half Dome is, since I can't come up with a better word, *unique*. As with the animals in George Orwell's *Animal Farm*, where all were equal but some were more equal than others, so is the uniqueness of Half Dome. There are domes aplenty both within and outside nature. For instance, Yosemite's North Dome is a great granite near-hemisphere rising 3,500 feet above the valley floor, surmounting the Royal Arches. But it is not perfect. It has a slightly pointy top. The dome of St. Peter's Basilica in Rome is perfection in its own right, but it was shaped, symmetrically, by human hands. Then there is Half Dome. It, too, was shaped, after a fashion. Shattered by the quarrying forces of the glacier that carved away great slabs of its granite mass, Half Dome, with its 4,700-foot summit, dominates the upper end of the Yosemite Valley. It is the imperfect dream, which in its shattering became reality's asymmetric perfection. The Indians called it *Tis-sa-ack*, after the principal character of one of their legends. In the center of its sheer semicircular 2,000-foot rock face is a vertical cleft in which a growth of lichens has outlined a face that some say is that of Tissaak herself. Everyone who has ever seen Half Dome—Tissaak—has been awestruck. Or anyway, nearly everyone.

The grandeur of Yosemite is breathtaking, such that in 1864 President Lincoln was persuaded to sign legislation permanently setting aside the Yosemite Valley, with the Mariposa Grove of large trees, ceding it to the state of California for public use as a vacation and recreation area. In 1890 it was ceded back to the United States and expanded to include vast tracts of the central Sierra Nevada, encompassing 1,189 square miles, to become Yosemite National Park. It is a rugged paradise of sheer cliffs, monumental rock formations, and dazzling waterfalls. I shall forever associate Yosemite with snow.

Viewed from 30,000 feet, the mountains lie gloomy under a layer of clouds that are even higher. If the year matters to you, I can tell you that it was 21 years ago. Dappled with white swatches and punctuated by massive granite outcroppings, the conifered greenish-black expanses are blended, in the absence of shadows, into an austere and forbidding miniature landscape. Except for Half Dome. There it stands, gleaming white and starkly grand, the dark profile of Tissaak etched prominently into its granite face. Half Dome in the winter snow.

Some years later—maybe ten—a gloomy day in March starts with a 4 AM bus departure from San Francisco to the railroad station in Oakland, thence by rail to a waiting bus in Merced. The Merced River is swollen, and the Yosemite is pouring water into it over its majestic falls. The rock formations through the valley are again muted and dreary. Half Dome from closer up is impressive, though close-up this time is only relative. This time it looms at the opposite end of the Yosemite Valley. Time in the valley is short, the tour a whirlwind. Despite a 19-hour day that ends in San Francisco in the driving rain at 11 PM, most of those hours have been spent getting there and back. I feel cheated. Looking back on the experience, its most memorable aspects were lunch in the Ahwahnee Hotel, and the magnificent, swollen waterfalls. In retrospect, it was worth it. It was a grand *hors d'oeuvre*, whetting the appetite for later dishes, though they took a few years coming.

Yosemite occupied Ansel Adams, the photographer, and John Muir, the naturalist, for an entire lifetime, and they thought that all too short. Each felt deeply that he had only begun his study. I had but a few days. For a second time, I left unfulfilled, because the high country was still closed by the late snow. That included Glacier Point, *the* view point for the valley. On the other hand, along with Adams and Muir I am convinced there is no such thing as being sated with Yosemite. And so I should have remained unfulfilled, no matter the weather. There are always, along with the things seen, the things unseen of which one can only guess, and then only dimly, for we see through a glass, darkly.

And so I long ago made my peace with the weather, since it so often happens that though it taketh away, it also giveth. The day before my arrival 4 feet of fresh snow fell in the mountains, which includes the parking lot of my hotel, the new Marriott Hotel at Fish Camp just outside the south entrance of the park. It is 40 minutes from the Yosemite Valley and several thousand feet higher in the mountains. The drive that I got to take each morning and evening was a lovely compensation for the inconvenience of a filled Ahwahnee Lodge. Massive amounts of water from melting snow swelled the rivers and poured over all the falls, some of which are visible only at such times, and though the snow had disappeared from the valley, gleaming accumulations still adorned the higher elevations of the rock formations. On my first morning trip to the valley it glistened all around me, only the road being clear of it. On my arrival, a lot of snow still lingered among and on the forest giants in the Mariposa Grove just inside the entrance, making it a good time to visit the grove, because attendance was sparse. The visit was very soothing and well worth my time. Had I been staying in the valley itself I should have missed it, another compensation.

So many things you can pack into three gorgeous, cloudless, sun-filled days, with another half day at each end. And also so many things you can't pack into them. So many things seen, so much done. Half Dome on close inspection loses none of its appeal, despite some differences. Tissaak proves to be a distant vision, her profile having disappeared from the rock face viewed from across Mirror Lake. But taking her place are other wonders of Half Dome, the most spectacular its reflection in the quiet face of the lake. And again, snow. The most disturbing aspect is the silting in of the lake. Significant portions have disappeared from more recent views.

I'm sure you recognize that my remembrances of Half Dome are simply an example of things seen. I could name you hundreds. Likewise, the high meadows of Yosemite symbolize all those remembrances of things not seen. There are a lot of those, too. Some of them I still have hopes for—that one day I can transfer them from column 2 to column 1.

And then there is Mirror Lake as Ansel Adams photographed it. It is gone forever. It is not only among the sights unseen by me, but it is among those unseeable by anybody except as depicted by previous more fortunate visitors. Though Mirror Lake is still lovely, its reflections diminish yearly. One day Half Dome's reflecting pool will likely be no more. The category of the unseeable has gotten out of hand, and unless humanity changes its ways, there will be nothing more left of the beauty of the natural world to be included by our children among their remembrances of things seen.

I think that maybe if Mother Goose were writing today she would be less sure than she was several generations ago that we should all be happy as kings. (Besides, why was she so sure then that we should be? Actually, even though the world was then filled with wonderful things, there are a lot more wonderful things around now than there were then. There were also a plenty of reasons that not everyone should have been as happy as kings, then any more or less than they are now. But that's another topic for another day. And anyway, who says kings are generically happy—always, or even ever?)

J.B.T.

mail box

An Educator Retires

To the Editor:

It was my privilege, on Aug. 8, 1995, to have been included in the group of well-wishers gathered to honor Charles L. (Chuck) Votaw, M.D., Ph.D. upon the event of his retirement from the faculty of the James H. Quillen College of Medicine. A professor of Neuro-Anatomy, Dr. Votaw had served our institution for 18 years, most recently as Associate Dean for Academic Affairs.

Perusing the list of those gathered for this occasion, I was struck by the fact that the "town element" of the "town-gown complex" was conspicuously absent. Whether this was a result of a lack of invitation or a failure of response, I cannot say. It may be that there is no longer a distinguishable "town" entity. If so, this was not always the case. And, in the earlier years, I felt I was more a part of the "town" than the "gown," even though I have taught medical students since the first class matriculated.

The late '70s and early '80s were an interesting time of medical change in the Tri-Cities area. What, with the Memoranda of Understanding to be hammered out, staff privileges to be granted or limited for faculty members in our various private and community hospitals, call schedules and/or exemption from same to be arranged, and the acceptance of students and residents within the halls of our various medical centers; Chuck Votaw found himself flung into the breach to negotiate such items in unfamiliar milieu (or were they melee?).

By virtue of committee assignments and staff offices held, I found Dr. Votaw to be my worthy opponent on numerous occasions. I feel certain that he considered me neither (i.e., worthy nor significant opponent). Much of the work we did then has gone by the board. One particular session still comes to mind. Details have become somewhat dimmed with time, but fortunately they are of little importance here.

In a Johnson City Memorial Hospital meeting, a young physician no longer in this community submitted a letter accusing Dr. Votaw of certain "egregious" acts, to which Dr. Votaw took particular exception and attacked with vehemence. I had to go home and look up the word to see why he had been so disturbed. Interestingly, egregious has many odious synonyms, but its literal translation in the unabridged dictionary is "set apart from the herd" and in times past its first meaning was "distinguished." Egregious has become one of my favorite words.

With all of the remembrances raised and all of the accolades bestowed on Dr. Votaw at this recent assembly, this earlier era should not have been overlooked, but it was. We have gone through several Deans, but Dr. Votaw has been a rigorous survivor. In a personal conversation that evening, he told me that he had never expected (or was it suspected) what he was getting into when he accepted the position here.

But, he did well by us. And, to a large extent, the medical school of which we are justly proud has been shaped and molded by the hands of this dedicated educator and administrator. He *is* a singular individual. He *is* egregious. His career, by all standards, has set him apart from the herd.

Here's wishing him the best in his retirement.

Clarence E. Goulding Jr., M.D.
1600 Crystal Springs Dr.
Johnson City, TN 37601

in memoriam

Edbridge Eastman Anderson, age 92. Died September 20, 1995. Graduate of University of Tennessee College of Medicine. Member of Nashville Academy of Medicine.

Cyrus Erve Kendall, age 91. Died September 15, 1995. Graduate of University of California School of Medicine. Member of Nashville Academy of Medicine.

Frank L. Milligan, age 92. Died September 11, 1995. Graduate of University of Tennessee College of Medicine. Member of Lakeway Medical Society.

TMA Members Receive AMA Physician's Recognition Award

The following TMA members qualified for the AMA Physician's Recognition Award during August 1995. This list, supplied by the AMA, does not include members who reside in other states.

Physicians can receive the PRA certificate valid for one, two, or three years. For the one-year award, physicians report 50 hours of continuing medical education, including 20 hours of Category 1; for the two-year award, physicians report 100 hours of CME, including 40 hours of Category 1; for the three-year award, physicians report 150 hours of CME, 60 of which are Category 1. Each application for the PRA must also verify participation in Category 2 CME activities.

Gary B. Bryant, M.D., Woodbury
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Larry H. Cox, M.D., Kingsport
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new members

The *Journal* takes this opportunity to welcome these new members to the Tennesssee Medical Association.

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personal news

Lyman A. Kasselberg, M.D., Memphis, has been selected to receive the Tennessee Academy of Family Physicians Distinguished Service Award.

Larry H. Westerfield, M.D., Kingsport, has been elected a Fellow of the American College of Radiology.

announcements

CALENDAR OF MEETINGS

NATIONAL

Dec. 1-3	American Academy of Psychiatrists in Alcoholism and Addictions—Ritz Carlton, Amelia Island, Fla.
Dec. 1-5	American Society of Hematology—Westin, Seattle
Dec. 6-8	National Conference on Chronic Disease Prevention and Control—Atlanta
Dec. 7-10	American Academy of Psychoanalysis—The Charles, Boston
Dec. 13-17	American Psychoanalytic Association—Waldorf-Astoria, New York
Dec. 15-18	Ethical Issues in the Care of Terminally Ill and Dying Patients (sponsored by CEREC Center of Southeast Florida)—Rolling Hills Hotel and Golf Resort, Ft. Lauderdale, Fla.
Jan. 9-13	American College of Nuclear Physicians—Caribe Hilton, San Juan, P.R.
Jan. 10-13	American Association for Hand Surgery—Marriott Desert springs, Palm Springs, Cal.
Jan. 11-14	National Association of EMS Physicians—Registry Resort, Naples, Fla.

Actions of the Tennessee State Board of Medical Examiners

August, 1995

Name: Gary Keith Bryson, M.D. (Bowling Green, KY)
Violation: Felony conviction for mail fraud; fraud or deceit in the practice of medicine.
Action: License suspended—suspension stayed, and license placed on probation for five years; during probationary period, Dr. Bryson cannot bill, charge, or in any way request or receive monetary payment for medical goods or services provided to any Tennessee citizen; assessed civil penalty of $500.

Name: Donald S. Chandler, M.D. (DeSoto, TX)
Violation: Disciplinary action by Texas State Board of Medical Examiners; unprofessional, dishonorable, or unethical conduct.
Action: Per agreed order, license placed on probation for five years; may not practice bariatric medicine on any patient except for overweight pediatric patients; must receive additional continuing education.

Name: Ronald Hindman, M.D. (Harwich, MA)
Violation: Disciplinary actions taken by boards in Massachusetts, Indiana, and Ohio.
Action: Per agreed order, license placed on probation for five years; must refrain from consumption of alcohol and any controlled substances not prescribed by a treating physician; must receive chemical dependency treatments and submit documentation.

Name: Howard M. Lynnes, M.D. (Rockwood, Dayton)
Violation: Unprofessional conduct in his failure to provide adequate supervision of nurse practitioner and failure to maintain adequate supervision of his Dayton practice; negligence in the course of medical practice; dispensing, prescribing, or otherwise distributing any controlled substance or other drug to any person in violation of state and federal laws.
Action: License suspended for six months; license to be placed on probation for one year following conclusion of suspension; assessed civil penalties totaling $5,500.

Women's Health Partners— A Partnership in Health for Life

Today's woman manages career, household, and often a family, but cannot find time for her own health and well-being. For instance, who among the 51% of women in the work force with children under 1 year of age can remember to practice preventive medicine for herself? With so many responsibilities, today's woman typically relegates her health to a second place priority. Obviously she needs a strategy to help her maintain wellness beyond that which she is capable of attaining on her own. The Memphis and Shelby County Medical Society Alliance's program, Women's Health Partners, is designed to meet her needs.

The Women's Health Partners program seeks to improve the health status of women through a partnership of concern and caring. The health partners encourage and support each other to develop and maintain their wellness through preventive medicine. The program is designed to make certain no partner fails to receive the motivation and care so vital to a vibrant and healthy life-style.

The first step toward the program's goal of wellness requires each woman in the program to select another woman as her health partner. Her partner may be a family member, a neighbor, a co-worker or perhaps her best friend, but particularly someone who shares her concern for living a healthy life-style. Then as partners they encourage and support each other on a regular basis, utilizing a simplified health record as a reminder for routine tests, examinations, and immunizations and to track their progress. Such basic preventive measures as breast examination, blood pressure measurement, mammogram, cholesterol screening, and Pap smear are recorded. Finally, to ensure that a healthy life-style is maintained, the program includes an education and counseling step that reinforces the principles of wellness.

A very important part of the program is motivation. All some women need to get started is the sense of caring that a partner provides. With the support, encouragement, and watchful eye of each partner for the other, health and well-being achieve their rightful priority in each woman's life. The necessary steps in preventive health are "assured" in the lives of the participating women.

As Dr. Irving Fleming, one of the medical consultants for this project and a past-president of the American Cancer Society, said, "It is not enough to educate women in matters concerning their health. Women must 'follow through' with what they have learned. This "partnership idea will motivate them to do that."

The initial response to the Women's Health Partners program proves Dr. Fleming's point, having attracted women from far beyond the Medical Alliance's traditional base of community support. The Women's Health Partners program, in a continuation of the Alliance's leadership role in promoting health education, is now poised to make a dramatic difference in the health of *all* women in Tennessee and the nation.

The success of the program is dependent upon recruiting a large number of women to be partners. Once you have selected your partner, to learn more about this exciting new program, please call the Memphis and Shelby County Medical Society office at (901) 761-0200. ❑

Cathy Miller, President
Memphis and Shelby County
Medical Society Alliance

HELP FOR IMPAIRED PHYSICIANS

The Tennessee Medical Foundation Impaired Physician Peer Review Committee assists doctors who are suffering from the disease of chemical dependence, or mental or emotional illness, or both, including certain behaviors problematic for physicians. The thrust of the program is rehabilitative, not punitive. The Committee is composed of physicians who have special expertise in these areas, some from personal experience. Effective treatment for these illnesses is achieved most easily when the disease or illness is detected early. The Committee urges family, friends, and associates to avoid misguided sympathy which enables a physician's impaired condition to deteriorate.

HELP US TO HELP

Call the TMF Impaired Physician Program at (615) 385-3319; outside Nashville call collect. Telephone message service available around the clock.

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Influenza Vaccine May Enhance Theophylline Toxicity

A Case Report and Review of the Literature

RONALD C. HAMDY, M.D.; MELINDA MICKLEWRIGHT, D.Ph.;
VALERIE F. BEECHAM, Pharm.D.; and SHARON W. MOORE, M.D.

Case Report

A 67-year-old white man was diagnosed with chronic obstructive pulmonary disease. To control his symptoms, he took 300 mg of Theophylline SR twice daily. His medical condition was stable, and his serum theophylline levels had varied in the therapeutic range of 7 to 12 μg/ml for the past year. The day after he was given the trivalent influenza vaccine Fluogen (Parke-Davis) he complained of nausea, palpitations, and "feeling under the weather." Though his physical examination was negative, laboratory investigation revealed a theophylline blood level of 26.06 mg/ml. He had complied well with his prescription and had not given himself any other medication. In light of his elevated serum theophylline level, his dosage was reduced to 200 mg twice a day and his condition was monitored. His symptoms abated and his condition improved, but a few days later he developed signs of obstructive airways disease. When his serum theophylline levels were found to be in the subtherapeutic range, his theophylline dose was increased to 300 mg twice a day. He became asymptomatic, and his theophylline blood levels returned to the therapeutic range, where they have remained.

Discussion

The effect of the influenza vaccine on theophylline metabolism has been disputed, and there remains no consensus (Table 1). There are reports indicating the influenza vaccine increases theophylline blood levels in some patients.[1-3] The depression of the metabolic activity of the hepatic cytochrome P-450 enzyme system has been cited as a possible explanation,[4] but this has not been confirmed by other investigators.[5]

In a study of the effects of the influenza vaccine on theophylline clearance, Bukowskyj et al[6] concluded that the vaccine impaired the clearance of theophylline. On the other hand, a number of reports dispute any effect whatsoever of the influenza vaccine on theophylline metabolism.[5,7-12]

It is likely the influenza vaccine affects theophylline metabolism in some, but not all, patients, and that in the vast majority the interaction is not clinically significant. Nevertheless, we believe clinicians should be aware of the potential interaction between the influenza vaccine and theophylline. It is presently recommended that all individuals over the age of 60, as well as all patients with chronic obstructive pulmonary disease, receive the influenza vaccine. Since many such patients may be receiving maintenance doses of theophylline, their physicians should caution them about possible adverse effects

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From the Department of Geriatrics, James H. Quillen College of Medicine, East Tennessee State University, Johnson City, and the Veterans Affairs Medical Center, Mountain Home.

Reprint requests to Department of Geriatric Medicine, James H. Quillen College of Medicine, East Tennessee State University, P.O. Box 70429, Johnson City, TN 37614-0429 (Dr. Hamdy).

TABLE 1

INFLUENZA VACCINE AND THEOPHYLLINE CLEARANCE RESULTS OF VARIOUS STUDIES

Authors	Population Studied	Age (Years)	Numbers	Type of Vaccine	Theophylline Preparation	Effect on Theophylline Blood Levels
Renton et al, 1980	COPD	67-79	3	Trivalent influenza vaccine	Oxtriphylline	Increased
Walker et al, 1981	Asthma (steroid dependent)	15	1	Trivalent influenza vaccine	Theophylline SR	Increased
Winstanley et al, 1985	Healthy subjects	26.9	7	Trivalent vaccine	Phyllocontin	No change
	COPD	69.4	5	Highly purified subunit INV	Continuous NAPP	No change
Fischer et al, 1982	Asthma	36 (21-61)	12	Trivalent vaccine	Theo-Dur	Increased
Goldstein et al, 1982	COPD	52-80	16	Fluzone (Connaught Labs)	Not specified	No change
Gomolin et al, 1985	Multiple path.	80.8 (±10.3)	14	Trivalent vaccine	Slo-Phyllin Somo-Phyllin	No change
Stults et al, 1983	Chronic bronchitis	64 (57-79)	7	Not specified	IV Theophylline	No change
Jonkman et al, 1988	Healthy	23 (20-27)	6	Not specified	Theo-Dur	No change
Bukowskyj et al, 1985	Healthy	37.3 (±10.9)	12	Fluogen	Aminophylline IV	No change
	COPD	49.2 (±12.8)	15			
Britton et al, 1982	COPD	60.6 (44-76)		Fluogen	Not stated	No Change

when they receive the influenza vaccine. Furthermore, if theophylline levels rise following administration of the vaccine, clinicians should consider reducing the theophylline dose for a few days and then increasing the dosage to its original level. ❑

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Vanderbilt Morning Report

Pneumococcal Pericarditis: A Rare Complication of Pneumonia

Case Report

Twelve days prior to hospitalization, a 46-year-old man, who worked as a roofer, fell off a ladder and down an embankment, injuring his right shoulder. He was seen three days later in orthopedic triage and was found to have decreased range of motion in the right shoulder, with pain on movement, for which he was given a sling. Upon follow-up seven days later in the orthopedic clinic, he complained of anorexia, occasional nausea and vomiting, shortness of breath, a cough productive of yellow sputum, and a swollen, painful right shoulder. He denied having any chills or fever, hemoptysis, chest pain, orthopnea, paroxysmal nocturnal dyspnea, or lower extremity edema. He had no recent infections, nor was he at risk for HIV or tuberculosis. His past medical history was unremarkable except for a history of alcohol and tobacco abuse.

Upon admission to the hospital, the patient was found to be dehydrated with a temperature of 98.6°F, pulse 96/min, respirations 26/min with a Kussmaul breathing pattern, blood pressure 95/50 mm Hg and a pulsus paradoxus of less than 10 mm Hg. His lungs were clear with decreased breath sound over the right lung field. Examination of the heart was unremarkable. The musculoskeletal examination was remarkable for a large, softball-sized, fluctuant, tender mass anterior to the right acromioclavicular joint overlying the deltoid muscle anteriorly and posteriorly. A second baseball-sized mass was noted over the infraspinatus muscle, and a third baseball-sized mass was noted anterior to the glenohumeral joint.

Results of laboratory tests revealed a sodium of 121 mmol/L, potassium 2.9 mmol/L, chloride 85 mmol/L, CO_2 18.2 mmol/L, anion gap 18, BUN 57 mg/dl, and creatinine 2.8 mg/dl. A CBC revealed a WBC count of 17,280/cu mm with a left shift on the differential. Westergren sedimentation rate was 85 mm/hr. Aspiration of the patient's right shoulder revealed a WBC count of 501,000/cu mm with 92% neutrophils and 1+ gram-positive cocci.

An arterial blood gas analysis revealed a pH of 7.42, Pco_2 19 mm Hg, Po_2 109 mm Hg, CO_2 12 mmol/L, and serum CO_2 of 15.8 mmol/L. Electrocardiogram showed normal sinus rhythm and diffuse nonspecific ST segment changes. A CT scan of the right shoulder and chest revealed large cystic fluid collections in the right anterior and posterior deltoid muscle and a small right lower lobe infiltrate and effusion. A large pericardial effusion was also noted. Pending culture results, the patient was empirically given broad-spectrum antibiotic coverage. He was also given hydration therapy for electrolyte abnormalities. A transthoracic echocardiogram revealed a circumferential pericardial effusion of moderate size, with normal valves and no evidence of cardiac tamponade.

A diagnostic pericardiocentesis produced an immediate 30 mm Hg rise of systolic blood pressure. Approximately 210 cc of purulent fluid were aspirated, showing a WBC count of 365,000/cu mm with 99% segmented neutrophils and an LDH of 32,530 IU/L. The patient was taken to the operating room for incision and drainage of fluid collections in his right shoulder, and drainage of his pericardial effusion via a pericardial window with placement of mediastinal drains and a right chest tube. Blood and pericardial cultures were positive for *Streptococcus pneumoniae.* The antibiotic therapy was changed to penicillin G, with rifampin added later for endocarditis prophylaxis and/or synergy. His antibiotic therapy was changed to oral trimethoprim-sulfamethoxazole after two weeks, and he was eventually discharged in good condition.

Discussion

Throughout medical history, purulent pericarditis has continued to be a diagnostic and therapeutic challenge, with a significantly changing spectrum. One of the largest autopsy series studied by Klacsman et al[1] showed that before 1943 purulent pericarditis typically occurred in children and young adults (median age 20 years), and was due to *Pneumococcus* (51%), *Staphylococcus* (19%), or *Streptococcus* (10%). In contrast, since 1943 and the start of the antibiotic era, this disease now occurs mostly in older patients (median age 49 years) with the most common organism being gram-negative bacilli (32%).

These changes reflect the increased numbers of elderly patients with complicated disease processes (hemodialysis, thoracic surgery, chemotherapy, immunosuppression, diabetes mellitus, uremia, and hepatic failure).[2] Other consistent risk factors in other studies have included untreated pneumococcal pneumonia, congenital hypogammaglobulinemia, chronic alcoholism, and preceding pericardial effusion.[3]

In general, purulent pericarditis is caused by spread from a contiguous focus of infection (e.g., pneumonia or empyema), an intracardiac focus (e.g., endocarditis), via a hematogenous route, or direct inoculation into the pericardial sac (e.g., thoracic surgery or penetrating trauma).

A review of 113 cases of purulent pneumococcal pericarditis by Kaufman et al[3] revealed the incidence of other associated pneumococcal infections to be pneumonia (93.1%), pneumonia with empyema (66.6%), otitis media (6.9%), arthritis (2.3%), subcutaneous abscess (2.3%), meningitis (1.1%), and endocarditis (1.1%). Pneumococcal arthritis is very rare, occurring typically in patients who are elderly, alcoholic, and have underlying chronic joint disease.[4]

Presented by Roy L. Hood, M.D., medical resident, Vanderbilt University Medical Center, and Mark A. Zenker, M.D., chief medical resident, Nashville VA Medical Center.

The diagnosis of purulent pericarditis can be difficult, and made antemortem in only 10% to 20% of cases.[1,3] The signs and symptoms of pericarditis, such as dyspnea, chest pain, fever, and tachycardia, cannot be differentiated from those of pneumonia. Such signs of right-sided congestive heart failure as hepatomegaly and elevated jugular venous pressure are more specific but are seen only 43% to 55% of the time. Despite the presence of large pericardial effusions, a pulsus paradoxus or pericardial friction rub is detected in only 30% of patients.[2,3]

Laboratory findings include leukocytosis (20,000/cu mm). The electrocardiogram is abnormal in 70% to 100% of patients. Classic pericarditis changes (ST segment elevation) are found in 20% to 25%. Radiologic studies may reveal cardiomegaly on chest x-rays. Computed tomography and magnetic resonance imaging are useful for revealing pericardial effusion. The most sensitive and accurate study would be a two-dimensional echocardiogram to detect a pericardial effusion, access for tamponade, and possibly to guide pericardiocentesis. Pericardiocentesis is the most valuable test, with purulent pericarditis fluid revealing leukocytosis <50,000/cu mm (predominately neutrophils), glucose 35 mg/dl, protein 3.0 gm/dl, and positive gram stains and culture.[2]

Treatment of pneumococcal purulent pericarditis requires high doses of intravenous penicillin for a minimum of two to three weeks, though systemic antibiotics alone are inadequate treatment. Some authors recommend continuous catheter drainage of the pericardium only,[5] but most agree that surgical drainage via a subxiphoid pericardiotomy and tube pericardiostomy is required to prevent recurrence.[6,7] Rarely, thick pericardial effusions require pericardiectomy to achieve adequate drainage and prevent constrictive pericarditis from developing.

Fortunately this patient had an early diagnosis with a good outcome. Because this condition has a high mortality rate, a high index of suspicion is needed, especially in a patient with high risk factors. ❑

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Loss Prevention Case of the Month

Negligent Delay or Judgement Call Gone Bad

J. KELLEY AVERY, M.D.

Case Report

A 24-year-old primipara with a normal prenatal course had an expected date of confinement two days prior to her admission to the hospital in active labor with the bag of water spontaneously ruptured, the cervix 3-cm dilated, and 80% effaced. Her contractions were five minutes apart and lasted about 90 seconds. Four days prior to this admission she had been observed overnight, and it was determined that she was not in active labor. She was monitored and sent home.

Her amniotic fluid was clear and the nitrazine test was positive. Her blood pressure was 124/86 mm Hg. She had been followed regularly during her pregnancy and the only risk factor that appeared in her medical record was excessive smoking. Orders taken over the phone included Pitocin according to protocol. The uterine contractions increased in frequency and intensity, and two hours after admission decelerations were noted and epidural anesthesia was begun. Following the injection of the anesthetic agent, Nescarine, her blood pressure dropped and bradycardia appeared on the fetal monitor; both returned to baseline after the patient was turned on her left side. It was two and one-half hours after admission before the Pitocin drip was started, with 2 cc in 250 cc to run at 2 mic/min. Twenty minutes later the Pitocin was increased to 4 mic/min, which produced contractions every four to five minutes and lasted for 60 to 70 seconds. Fifteen minutes later the Pitocin was increased again to 6 mic/min. Shortly thereafter, whereas three consecutive late decelerations occurred, the Pitocin was stopped and O_2 was started.

With the contractions at four to five minutes and lasting for 60 to 80 seconds the Pitocin was restarted at 2 mic/min, and the order was to "augment slowly." Again some five hours after admission late decelerations were noted, but these cleared when the patient was placed on her left side. The Pitocin was stopped by a phone order. Six hours after admission, with the patient not progressing despite contractions, the Pitocin was restarted at 1 cc IV every five minutes.

The attending physician came to the labor and delivery area and because no progress was being made, ordered the crew to set up for a C-section because of "C-P disproportion." The surgery began about seven hours after admission, and without apparent complication the patient was delivered of a 6-lb girl with Apgar scores of 8 and 9. While in the operating room (OR), some excessive vaginal bleeding was noted and the uterus was somewhat boggy. With uterine massage and IV Pitocin, this seemed to be corrected.

One hour after the surgery, while the patient was in the recovery room, massive clots were expelled and her blood pressure fell. Fluids and blood were ordered and administered, Methergine was administered IV, and the bleeding seemed to slow. Replacement treatment was vigorously pursued with blood and blood products, but vaginal bleeding continued. Thirty minutes after the C-section, the patient's blood pressure was recorded at 66/42 mm Hg. Vigorous bleeding continued. The attending physician, who had left the hospital, was called on his beeper. Telephone orders were given, and both IV Pitocin and Methergine were given, but without benefit.

With blood and blood products being given aggressively, the bleeding continued. The blood pressure remained low. When the attending physician was called and informed that his presence was needed, he said he was "on my way." Blood, packed red blood cells, albumin, and cryoprecipitate were "pushed!" When the bleeding continued, the attending physician decided to take his patient to the OR and examine the uterus under anesthesia. This was done, more oxytoxics given, and, with vigorous massage, the uterus contracted and the bleeding stopped, but resumed promptly after the patient returned to the ICU.

The patient was supported the next eight hours with more blood and blood products. A consultant was called for possible bleeding disorder, but he thought that there was no coagulopathy and suggested Swanz-Ganz catheterization, which showed that the patient was in fluid deficit. Emergency hysterectomy was delayed to correct the "DIC." The blood pressure remained low and continued to drop. Ten hours after delivery, the patient was taken to the OR for an emergency hysterectomy.

Blood and fluid resuscitation were continued vigorously, but bleeding continued, and the patient died about 20 hours after her admission and 12 hours after the C-section. Autopsy was refused by the family.

A lawsuit was filed charging the attending physician with negligent management of the labor and failure to treat the postpartum hemorrhage in a timely manner.

Loss Prevention Comments

This 24-year-old woman died following a C-section because she bled to death and nobody could stop the bleeding. The attending physician tried to replace the blood and fluids. He gave massive amounts of Pitocin and Methergine after delivery in an effort of stop the bleeding. He even took the patient to the OR where he examined her under anesthesia, thinking that there might have been some intrauterine problem that he could correct. Doubtless he would have done an emergency C-section at that time, but the bleeding seemed to respond to massage and drugs. Both he and the consultants made the decision to correct what appeared

(Continued on page 469)

Dr. Avery is chairman of the Loss Prevention Committee, State Volunteer Mutual Insurance Company, Brentwood.

The Case of the Month is taken from actual Tennessee closed claims. An attempt is made to fictionalize the material in order to make it less easy to identify. If you recognize your own case, please be assured that it is presented solely for the purpose of emphasizing the issues presented.

Department of Health Report

Community-Wide Epidemic of Hepatitis A—Shelby County, Tennessee

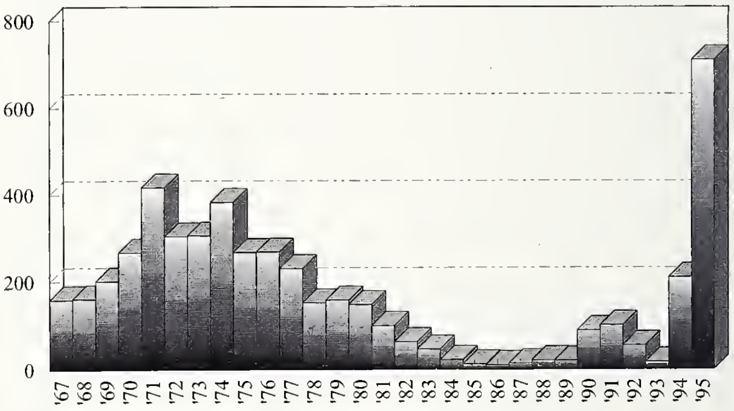
JENA T. SKINNER, B.S.N., R.N.

Shelby County has been in the midst of an unprecedented hepatitis A epidemic since July 1994, with reported cases in 1995 exceeding those in all historical records ever to occur within a calendar year, and there is no indication the epidemic has peaked. Campaigns to promote improved hand washing practices and immune globulin (IG) administration for contacts have been the only weapons available to combat the problem. While these measures are appropriate and have had some limited effect on the epidemic, they have not been enough to stem the ever-increasing tide of disease incidence and consequent distress this epidemic has caused the community. The new FDA-licensed hepatitis A vaccine may offer the best weapon for a frontal attack to prevent future epidemics, and strategies for its use in the current epidemic are being considered among health officials at the local, state, and national levels.

Shelby County, Tennessee, with a population of about 830,000 persons, consists of the city of Memphis and surrounding suburban areas. Hepatitis virus A (HVA) has been endemic at low levels within the county for decades. Epidemics in the early 1970s had the highest case count at 417. A steady decline in cases was not seen until the 1980s. In the early 1990s, another increase occurred, with 101 cases reported in 1991. Though in 1993 the number of cases dropped to 17, the 711 cases reported by the end of July 1995 has exceeded the number in all historical records (Fig. 1).

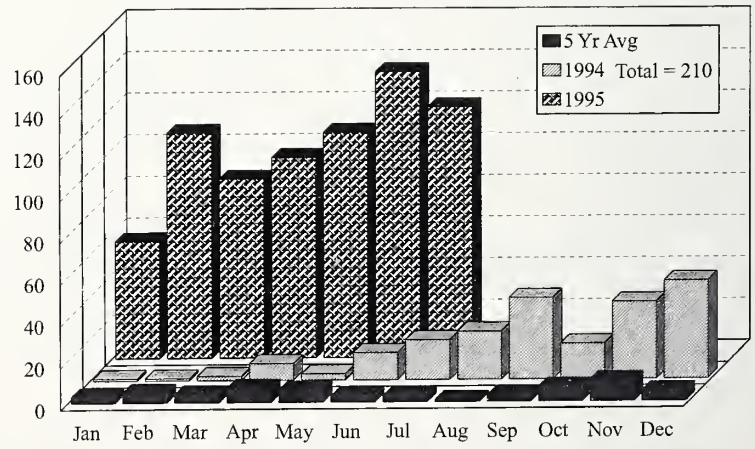
The five-year average of cases preceding the current epidemic (1989-1993) compared with 1994 and 1995 are shown by month in Fig. 2. It becomes apparent that increases of HVA began in the summer of 1994 and have exponentially continued.

Typical of community-wide hepatitis A epidemics, the highest rates of disease (>100/100,000 persons) have been in lower socioeconomic neighborhoods. Analysis of the 1995 data for symptomatic and asymptomatic cases reveals that over 85% have occurred among blacks (incidence of 170/100,000 vs. 18/100,000 for whites). Case rates have been equal among men and women. Children under 10 years of age comprise the largest age group at 29% (with an incidence of 159/100,000). The majority of persons with hepatitis A (45%) had no identifiable risk factor for the disease. Nearly 40%, however, either attended a day care center or were contacts of a day care center attendee. In 1995 alone, over 78 index cases were identified from 46 different day care centers, necessitating clinics for administering IG at each respective site. From the beginning,



Total as of July 31, 1995 = 711

Figure 1. Hepatitis A—Shelby County By Year, 1967 through 1995 (to date).



Total as of July 31, 1995 = 711

Figure 2. Hepatitis A—Shelby County, Five-Year Average (1989 through 1993) vs. Epidemic Years 1994 and 1995, By Month of Report.

From the Tennessee Department of Health, Nashville. Ms. Skinner is with the Epidemiology Program, Memphis and Shelby County Health Department.

this epidemic has been characterized as sporadic but propagated; no point food source has been identified for large clusters of people.

Control measures included education, IG administration, and surveillance. The Health Department launched a county-wide hand washing campaign, with the assistance of a corporate sponsor and many volunteers, promoting the Department's slogan: "Wash Away Disease: It's In Your Hands!" Mass media, billboards, bus signs, brochures, hand washing procedure signs, and numerous lectures were all used to help educate the public and day care and food service workers. Over 10,000 doses of IG have been given to contacts. Active testing (anti-HVA IgM, anti-HVA IgG and ALT) was conducted on day care attendees and food handlers from homes with a reported case of acute hepatitis A to identify previously unrecognized cases and the potential for exposures into the community. From July 1994 to June 1995, approximately 200 individuals were tested for this purpose, with an overall positivity rate of 33%. Earlier analysis of this seroprevalence data stratified by age group reflected ≤50% of the children attending day care as positive with a recent infection whereas ≤15% of the adult food handlers were positive. The merits of this approach to surveillance and outreach within these households and the beneficial effect to the community were investigated by an Epidemic Intelligence Service officer from the Hepatitis Branch of the Centers for Disease Control and Prevention. It was recommended that this approach be continued in an effort to minimize disease impact on the community. However, one fall epidemic year having now passed, with the numbers of cases continuing to multiply and local resources severely exhausted, we are no longer conducting such an active campaign. Instead, our efforts are now being channeled into a vaccine strategy for abatement of this disease.

With state and federal support, Shelby County in August 1995 began delivering a targeted vaccine intervention into four geographic areas with the highest rates of disease, attempting to achieve a 70% coverage among 26,000 children ages 2 through 9 years. By December 1995, two doses of the new vaccine will have been given to children in these targeted areas. What the results of this strategy will be on the rest of the community can only be speculated at this time. Without question, it will have implications for everyone involved in health care as we work collectively to improve the health of our public. ❑

Loss Prevention Case of the Month . . .

(Continued from page 467)

to be the onset of DIC before doing the inevitable hysterectomy.

Throughout heroic attempts to stop and correct the bleeding, nothing seemed to work. Hypotension persisted after hysterectomy and the patient died.

It is always easy to second-guess the physician after a bad result. Monday morning quarterbacking is a sport that all of us play well! However, in the pre-trial investigation and discovery depositions, very legitimate questions were raised. Was the use of Pitocin managed properly? Did the drug contribute to or cause the uterine atony after C-section? Was fluid resuscitation done properly? The S-G data seemed to support that contention. Should the hysterectomy have been done earlier? After the fact, that is a question easily answered. But at the bedside was there a good clinical reason to delay? It was obvious that expert testimony by the plaintiff was going to answer all these questions negatively. Was the Pitocin used and managed properly? *No!* Was fluid resuscitation pursued in a proper manner? *No!* Was the hysterectomy done in a timely manner? *No!* Was the attending physician on top of the management of this case? *No!* It was easy to challenge the record and almost impossible to defend it in the face of the death of a 24-year-old mother. A large settlement was thought to be the best way to close this case. ❑

TN DEPARTMENT OF MENTAL HEALTH/MENTAL RETARDATION

Full-time practice positions available in Knoxville, Chattanooga, Greeneville, Nashville, Memphis, Boliver, and Arlington. Salary potential up to $140,000 based on specialty and experience needed. Preferred specialty in Psychiatry, Internal Medicine, or Family Practice but will give full consideration to others.

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FAX: (615) 231-5396

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Arlington, TN 38002-0586
Telephone: (901) 867-2921
FAX: (901) 867-2921

Stanley Lipford, Superintendent
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Western Institute, TN 38074
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FAX: (901) 658-4640

Robert Erb, Superintendent
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FAX: (615) 639-2131

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FAX: (615) 450-5203

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Chattanooga, TN 37405
Telephone: (615) 265-2271
FAX: (615) 785-3333

Mike Flynn, Superintendent
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Western Institute, TN 38074
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FAX: (901) 658-5141 Ext. 380

Elizabeth Banks, Superintendent
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Memphis, TN 38174-0966
Telephone: (901) 524-1200
FAX: (901) 543-6055

Joe Carobene
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These 24 hour care facilities are stable and challenging settings serving children and adults who have developmental disabilities or mental illness. BENEFITS include: professional liability coverage, comprehensive individual benefits valued at an additional 25% to salary, academic affiliations, work with an excellent team of professionals, and financial assistance with job interview and relocation expenses.

ROBERT E. BOWERS

How's Your Attitude?

In this season of giving, I thought it might be appropriate for us in the most giving of professions to do a little self-examination to determine what is the prognosis of our career's health. One thing that has become apparent to health care professionals over the years is that a patient's *attitude* often determines the status of his health. And it is widely accepted as truth that the more optimistic and the more positive a patient's outlook, the better are his chances of recovery. So too, fellow physicians, our *attitudes* will determine the status of our practice's health.

We see our attitudes reflected in how we view our patients and the changes taking place in health care delivery systems. We do not have to agree with the changes, but we must be careful that our attitude does not reflect cynicism, or anger, or dejection, or apathy; for most assuredly, these attitudes will directly affect our own delivery of health care. In spite of the changes in the health care field, we are still the patient's advocate. We should strive for quality of care regardless of the climate in the surrounding medical community.

We can help keep our attitudes positive by getting involved in the changes, having a voice. One way to do that is by supporting and participating in our local, state, and national organizations. People generally derive great satisfaction from *acting*, rather than by allowing changes to infiltrate their lives, and feeling that the situation is out of their control.

It is easy in today's environment, where we may feel threatened and insecure, to allow apathy to seep in, choking out the spirit of enthusiasm that we first brought to medicine. As we start into the New Year, which is traditionally a new beginning, it should benefit us to remember those ideals and the promise we made to always strive to do our best for our patients.

Merry Christmas and a Happy New Year!

Robert Bowers

journal of the
tennessee
medical association

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DECEMBER, 1995

editorials

The Pain of Christmas

> Only God knows how many suffer at carnival time.
> —Violetta, in Verdi's *La Traviata*, Act III

Much has been made in the past few decades of the progressive secularization of Christmas, a trend I guess actually began after the Second World War. On the other hand, more likely it didn't. More than likely it has always been with us, or at least it has since Christianity became respectable. Also more than likely it is only that the season has been progressively extended, and has so overburdened the postal service and cluttered the electronic media to accommodate the merchants, that it seems to have become more commercialized. Again, that view may not be entirely in accord with the facts, or at least not all of them. The celebration of the Savior's birth, which is what Christians are, at least in theory, celebrating at Christmastime, is in truth but a part of what we presently think of as Christmas, and the Nativity sometimes gets lost in the shuffle that begins nowadays in earnest just after Labor Day, though intimations of it begin being wafted about around the Fourth of July. That isn't new either, but it is more noticeable these days, or at least so it seems to me, and is certainly more protracted. In what I now in my dotage consider the "good old days" (even though they weren't necessarily all that good), such trivia were likely constrained by the prohibitive expense as well as the technologic impossibility of getting out all that garish printed rubbish that assaults our senses and gluts our recycling bins, and of course most of those electronic nuisances couldn't even exist.

Christmastime has traditionally been a season of gladness and joy. An agglomeration of pagan practices that has grown by progressive accretion, it was born of the Roman Saturnalia as an attempt to mitigate the resistance of the erstwhile pagans of the realm toward embracing the Christian religion that was forced upon them through fiat by the Emperor Constantine early in the Fourth Century. Though it has gotten a reputation of having been a bacchanalia, which given the proper—or maybe more appropriately, improper—stimulus nearly any celebration can degenerate into, Saturnalia, observed during the week beginning December 17, was actually a time of joyous celebration, with feasting, singing, dancing, and the giving of gifts. It was customary for slaves to be served by their masters at times during the season. In short, it was very like the non-Christian celebration of Christmas that is so ubiquitous today. Which, I hasten to add, is not a bad thing. It is just that it is missing the most glorious part, even as the Saturnalia did. Christ likely figures into the one to about the same extent as He figured into the other.

At the Nativity, Holy Scripture tells us that while shepherds watched their flocks by night, the angel of the Lord came down, and the glory of the Lord shone all around them, and they were sore afraid, as who wouldn't be. "Fear not," said he, "for behold I bring you glad tidings of great joy, which shall be to all people. Go into Bethlehem, and there you will find the babe wrapped in swaddling clothes, and lying in a manger." And there were with the angel a multitude of the heavenly host, praising God, and saying, "Glory to God in the highest, and on earth peace, good will toward men (generic)." (I know that some of the modern scholars translate that as "to men of good will" or "to men with whom He is well pleased." Hogwash and balderdash! Scripture also says that He maketh His sun to shine and His rain to fall upon both the just and the unjust. It's just that the "just," usually self-styled, sometimes have a hard time swallowing that pill.) There were also wise men from the East who brought Him gifts of gold, frankincense, and myrrh. And all of them, wise men and shepherds alike, bowed down before Him and worshipped Him. And Mary, we are told, kept all these things and pondered them in her heart. I should think so! This is the happy side of Christmas, and it is the side we celebrate as Christians.

And all the while the revelry continued in the inn from which the young parents had been excluded. I should think that Mary surely kept all this and a lot of other things in her heart as well, because though that first Christmas meant for her the birth of her firstborn son, it was also a time of intense heartache and misery. First uprooted from her home in Nazareth by the census decree of Caesar Augustus, and forced to endure a hazardous, arduous journey at a time when her child could be born at any moment, she and her little family were next forced to flee to Egypt to escape Herod's massacre of Bethlehem's young children. The report brought by the magi may have caused Herod a few sleepless nights, and maybe a nightmare of so, but none of it disturbed the revelers in the inn, or the gluttons in the court down in Jerusalem.

It is unlikely that Jesus was born in December, because that is not the time of year when shepherds watch their flocks by night there. Nor is it likely that Caesar would have ordered the mass movement of the people in winter that would be required by a census. But we celebrate Jesus' birth in winter nonetheless. Perhaps it is just as well; certainly there is need for a little lightheartedness and warmth at the time when the light and warmth of the sun has all but vanished. In Puccini's opera *La Boheme*, the lovers Mimi and Rodolpho determine to separate because of her illness and his inability to care for her properly. But they decide to wait until spring to do it, because, says Mimi, people can die of loneliness during winter. For the lonely, the desolation is exacerbated during Christmas by their isolation from the gatherings of families and friends they see all about them. The suicide rate takes a quick upturn.

In celebrating the happy side of Christmas, we too often forget that Christ was not born of royal parents in the luxury of a warm, cozy bed in a palace. He was born instead to a poor young couple into a despised race in a poor, vanquished, victimized land. The Master we Christians profess to serve, and into whose kingdom He ordered us to lead everyone else, was, Scripture tells us, a man of sorrow and acquainted with grief. He never had a home of His own and seldom was afforded the luxury of a bed for sleeping. When He died, his sole possession was a single seamless tunic, for which the soldiers who crucified Him cast lots. We also need to keep in mind that He did not die above a cathedral altar between two candles, but on a barren hilltop between two thieves.

Almighty God has no hands save those of His children with which to minister to the needs of His creation, for all of which He has a boundless, unqualified love. Despite His sorrow and acquaintance with grief, though, that Master was the honor guest at banquets given by priests, members of the Sanhedrin, lawyers, physicians, and the despised publicans alike, and His detractors said of Him, "Behold, a wine-bibber and a glutton"—not, then, your average long-faced cleric. Whether or not you choose to think of ours as a Christian calling, and of course for many of you it is not, it is still a calling that because of our special gifts we—physicians and surgeons, doctors of medicine—have as a special, compassionate, even empathic, ministry. Christian or not, one could find no better model than Jesus of Nazareth. Though the operatic characters quoted above are fictional, they are prototypes of a vast universal legion that needs help—our help. Especially at Christmastime.

But not just at Christmastime.

J.B.T.

new members

The *Journal* takes this opportunity to welcome these new members to the Tennesssee Medical Association.

NASHVILLE ACADEMY OF MEDICINE
G. Albert Fox, M.D., Nashville
Philippe Jeanty, M.D., Nashville
Philip A.G. Karpos, M.D., Nashville
Daniel Joseph McHugh, M.D., Nashville
Joseph Carmine Paviglianiti, M.D., Brentwood
Robert Dale Pilkinton Jr, M.D., Nashville

KNOXVILLE ACADEMY OF MEDICINE
Sandra K. Elkins, M.D., Knoxville

ROBERTSON COUNTY MEDICAL SOCIETY
Gilbert Bazaldua, M.D., Springfield

WILLIAMSON COUNTY MEDICAL SOCIETY
David Max Nierste, M.D., Franklin

in memoriam

Mary Baxter Cook, age 89. Died October 7, 1995. Graduate of Vanderbilt University School of Medicine. Member of Nashville Academy of Medicine.

Sam B. McFarland, age 88. Died September 25, 1995. Graduate of University of Tennessee College of Medicine. Member of Wilson County Medical Society.

Actions of the Tennessee State Board of Medical Examiners

September, 1995

Name: David R. Congdon, M.D. (Ripley)
Violation: Disciplinary action by Vermont Board of Medical Practice.
Action: License placed on probation for one year; must receive assessment and evaluation for chemical dependence; must clear up encumbrances on Vermont license.

Name: Charles Harmuth, M.D. (Winchester)
Violation: Unprofessional, dishonorable, or unethical conduct; gross malpractice; dispensing, prescribing, or distributing controlled substances not in the course of professional practice; substance abuse/engaging in the practice of medicine when mentally or physically unable to safely do so; fraud or deceit in the practice of medicine.
Action: Per agreed order, license suspended for one year; must maintain advocacy of the Pennsylvania Impaired Physician Program during suspension and obtain advocacy of Tennessee Impaired Physician Program.

Name: Mostafa Zanaty, M.D. (Alamo)
Violation: Unprofessional, dishonorable, or unethical conduct; fraud or deceit in the practice of medicine; gross malpractice; substance abuse/engaging in the practice of medicine when mentally or physically unable to safely do so; dispensing, prescribing, or distributing controlled substances not in the course of professional practice.
Action: Per agreed order, license suspended for at least six months; may not practice in any other state or any health-related profession or field without Board's permission during suspension; license to be placed on probation for two years following suspension; assessed civil penalty of $1,000; must seek chemical dependency treatment through Impaired Physician Program.

TMA Members Receive AMA Physician's Recognition Award

The following TMA members qualified for the AMA Physician's Recognition Award during September 1995. This list, supplied by the AMA, does not include members who reside in other states.

Physicians can receive the PRA certificate valid for one, two, or three years. For the one-year award, physicians report 50 hours of continuing medical education, including 20 hours of Category 1; for the two-year award, physicians report 100 hours of CME, including 40 hours of Category 1; for the three-year award, physicians report 150 hours of CME, 60 of which are Category 1. Each application for the PRA must also verify participation in Category 2 CME activities.

Jerry K. Humphreys, M.D., Mount Juliet
H. Joseph Lantz, M.D., Chattanooga
David H. McConnell, M.D., Newport
Jack E. Scariano Jr., M.D., Knoxville
Owen C. Taylor, M.D., Cleveland
David T. Upchurch, M.D., Oak Ridge
Larry H. Westerfield, M.D., Kingsport

announcements

CALENDAR OF MEETINGS

NATIONAL

Jan. 9-13	American College of Nuclear Physicians—Caribe Hilton, San Juan, P.R.
Jan. 10-13	American Association for Hand Surgery—Marriott Desert springs, Palm Springs, Cal.
Jan. 11-14	National Association of EMS Physicians—Registry Resort, Naples, Fla.
Feb. 4-7	Southeastern Surgical Congress—Hyatt, Tampa
Feb. 7-9	American Society of Dermatopathology—Washington, DC
Feb. 7-10	American Group Practice Association—Fontainebleau Hilton, Miami Beach
Feb. 10-15	American Academy of Dermatology—Washington, DC
Feb. 14-18	American Academy of Pain Medicine—Lake Buena Vista Palace, Orlando
Feb. 18-22	Association of Academic Physiatrists—Ballys, Las Vegas
Feb. 22-27	American Academy of Orthopaedic Surgeons—Atlanta
Feb. 23-27	American Association of Orthopaedic Medicine—Orlando
Feb. 25	American Medical Tennis Association—John Gardiners Tennis Ranch, Phoenix

STATE

Feb. 23-24	Tennessee Society of Anesthesiologists—Opryland Hotel, Nashville

TMA Alliance Report

Leadership Summit

The TMA Alliance is pleased to announce the participation of three of its members as faculty in the TMA Leadership Summit scheduled for January 12, 1996, at Sheraton Music City Hotel. These three physician spouses are seeking re-election to the General Assembly.

Shirley Duer is in her 8th term (16 years) as State Representative, District 25, Cumberland and Rhea Counties. She is running for State Senate District 12, which includes Cumberland, Roane, Overton, Fentress, Morgan, and Scott Counties.

Mary Ann Eckles is a freshman State Representative, District 49, who is running for re-election in Rutherford County.

Rosalind Kurita, former County Commissioner from Montgomery County, is running for State Senate, District 22, which includes Montgomery, Cheatham, Stuart, and Houston Counties. She received the Legislator of the Year Award in 1994 for her work with bicycle helmet legislation.

The Alliance Breakout Session at the TMA Leadership Summit, "Grassroots Efforts and Getting Involved in Local Campaigns," will be from 3:45 to 4:45. ❑

Barbara Trautman, Chairman
TMA Alliance Legislative Affairs

HELP FOR IMPAIRED PHYSICIANS

The Tennessee Medical Foundation Impaired Physician Peer Review Committee assists doctors who are suffering from the disease of chemical dependence, or mental or emotional illness, or both, including certain behaviors problematic for physicians. The thrust of the program is rehabilitative, not punitive. The Committee is composed of physicians who have special expertise in these areas, some from personal experience. Effective treatment for these illnesses is achieved most easily when the disease or illness is detected early. The Committee urges family, friends, and associates to avoid misguided sympathy which enables a physician's impaired condition to deteriorate.

HELP US TO HELP

Call the TMF Impaired Physician Program at (615) 385-3319; outside Nashville call collect. Telephone message service available around the clock.

April 1996

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	2	3	4	5	6	7
8	9	10	11 12 13 14 **TMA 161ST ANNUAL MEETING** **Hyatt Regency Hotel—Knoxville**			
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	NOTES				

1995 MEMBERSHIP ROSTER TENNESSEE MEDICAL ASSOCIATION

An alphabetical listing of the members of the Tennessee Medical Assoication by component medical society is publised as a service to the membership. An asterisk (*) denotes physicians exempt from dues. A dash (—) denotes a student member.

BEDFORD COUNTY MEDICAL SOCIETY

Barnes, Donald D, Shelbyville
Bedford County Medical Society
Barnes, Donald D, Shelbyville
Beavers, Lana Sharon, Shelbyville
Canonico, Domenic M, Shelbyville
* Cooper, Albert Lee, Shelbyville
Derryberry, John S, Shelbyville
Gipson, Bruce Martin, Shelbyville
Jayakody, Frank Lorenz, Shelbyville
Johnson, Sue Paine Welch, Shelbyville
Magnuson, Carol Lent, Shelbyville
Melson, Danny Lee, Shelbyville
* Moulder, Grace E, Shelbyville
* Ownby, Fred Dillard, Bell Buckle
Richards, Aubrey Thomas, Shelbyville
* Rogers, Benjamin Carl, Shelbyville
Sells Jr, Samuel P, Shelbyville
Stimpson, Charles L, Shelbyville
* Stubblefield, Carl Thomas, Shelbyville
* Womack, Sara, Shelbyville

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Ali, Subhi Dawud Suhoh, Waverly
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* Blackburn, William H, Camden
Bourne Jr, Robert I, Camden
Curtis, T Randall, Waverly
Dominguez, Noel R, Waverly
Go, Virginia R, Camden
* Hartley, Mark F, Waverly
* Horton, Robert Leslie, Camden
Jackson Jr, Lawrence Richard, Waverly
McClure, Wallace Joe, New Johnsonville
Murphy, Patrick Joseph, Nashville
Ojeda, Nestor Armando, Waverly
Skelton, M Angela, Camden
Stephens, Joseph W, Waverly
Vitualla, Agustin V, Camden
Walker, Arthur Winfrey, Waverly

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Bell, W Ken, Maryville
Booher, Robert W, Maryville
* Bowen, John H, Maryville
Brown, Edward Francis, Maryville
Burkhart, Patrick H, Maryville
* Callaway Jr, Henry A, Maryville
Callaway, James Miller, Maryville
Calvert, David, Maryville
* Christofferson, James W, Maryville
Cline, Kim, Maryville
Cline, Richard, Maryville
Coleman, Cheryl E, Maryville
Collins, Tommy Edward, Alcoa
Cowan, John David, Maryville
Cox, David A, Maryville
Crowder, Clay G, Maryville
* Dorr, David, Maryville
Durand, Julie Ross, Maryville
Eason, John H, Maryville
Ellington, Eric Patrick, Maryville
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* Holder, James Thomas, Maryville
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Howard, Cecil B, Maryville
Huffman, John Raymond, Louisville
Ingram III, John Jackson, Maryville
* Isbell Jr, Homer L, Maryville
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* Kintner, Elgin P, Maryville
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McCroskey, Marye Lois, Maryville
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Dauhner, Michael Alan, Cleveland
DeAyala, Ralph E, Cleveland
DeVane, Jerry, Cleveland
DeVane, Jo Lee, Cleveland
Duncan, Eddie Norris, Cleveland
Faerher, Bruce W, Cleveland
Fernando, Felicito E, Cleveland
Ford, Dennis Clifford, Chattanooga
Garst, Steve W, Ducktown
Gibson, Donald Baker, Cleveland
Gilson, Karen, Cleveland
Grafton Jr, Edwin G, Cleveland
Hamilton, Howard Ken, Cleveland
Harting, Don C, Cleveland
Hays, William A, Cleveland
Huebschman, Jon C, Cleveland
Hughes, Charles Richard, Cleveland
Jackson, Stephen W, Cleveland
Jaggers, John S, Cleveland
Johnson Jr, William Frank, Cleveland
Johnson, Daniel V, Cleveland
* Johnson, William W, Cleveland
Killen, Larry R, Cleveland
Kim, Steven, Cleveland
* Kimball, Cecil Harry, Cleveland
Knahb, James, Cleveland
Knight, C Dewayne, Cleveland
Krueger, Sylvia Lynne, Cleveland
Kyle III, Clyde Alexander, Cleveland
Kyle Jr, Clyde A, Cleveland
* Lee, William R, Ducktown
Marcum, Robert F, Cleveland
Mazzolini, J Michael, Cleveland
McNulty, John Stephen, Cleveland
Miller, Roger Dale, Cleveland
Mitchell, Hays, McDonald
Murphy, Bill H, Cleveland
Murphy, John Allen, Cleveland
Muths, Frederick A, Cleveland
Newton, Nicholas, Cleveland
O'Malley, Michael M, Cleveland
Ozawa, T Ted, Cleveland
* Pierce, E Harris, Cleveland
Powell, John Manley, Cleveland
* Proffitt, William I, Cleveland
Robinson, Donald Edwin, Cleveland
* Rogness, John A, Cleveland
Rumble, Michael T, Cleveland
Scruggs, Fenton Lee, Cleveland
* Shoemaker, Kenneth E, Cleveland
Smith, Kevin M, Cleveland
* Smith, William R, Hilton Head Isl, SC
Snoddy, Janet Elizabeth, Cleveland
Snowman, Brenda, Cleveland
Stanhery II, William Cecil, Cleveland
Stone, James Patterson, Cleveland
Taylor, Owen C, Cleveland
Thurman, James Robert, Cleveland
Viser, Timothy Allen, Cleveland
Younger, Clyde P, Cleveland

BUFFALO RIVER VALLEY MEDICAL SOCIETY

Alderson, Charles Malcolm, Parsons
Averett, Stephen L, Linden
Barden III, Leroy F, Linden
* Coleman, Robert M, Murfreesboro
* Cook, William N, Primm Springs
Crider, John Paul, Parsons
* Holladay, Bertie L, Centerville
Teague, Paul Ford, Parsons

CAMPBELL COUNTY MEDICAL SOCIETY

Burrell, John S, Lake City
Cline Jr, Elijah Grady, LaFollette
Cohen, Thomas Leonard, LaFollette
Crutchfield, James Donald, LaFollette
Day, George Louis, Harrogate
Escalante, David, Jellico
Farris, James Clarence, LaFollette
Giles, James W, LaFollette
Hall III, Ronald Daker, LaFollette
Hartman, Ronald D, Jellico
Isham, Charles Aubrey, LaFollette
Kahir, M Humayun, Jellico
McRay, David E, Jellico
* Prater, Charles Alvin, Jellico
* Seargeant Jr, Lee Jess, LaFollette
Shih, Yiu-Fel, Knoxville
* Walker, Jesse Lee, LaFollette
Wilkens, Charles Henry, Jellico
Willis, Randall M, Cumberland Gap
* Wood, Burgin Henry, LaFollette

CARTER COUNTY MEDICAL SOCIETY

Akoury, Dalal A, Elizabethton
* Bronson, S Martin, Elizabethton
* Burik, Nicholas P, Elizabethton
Caudle, Scott Okrina, Elizabethton
Craig, James P, Elizabethton
Crowder, Brenda Jane, Elizabethton
Cruz Jr, Teodorico, Elizabethton
Gallaher, Richard Grant, Elizabethton
Galloway, Richard Eugene, Elizabethton
Gastineau, Jerry Lee, Elizabethton
Hardin, David Ross, Elizabethton
Hodge, Michael James, Elizabethton
Hopland, Arnold O, Elizabethton
Laing, Brent D, Elizabethton
Martin Jr, Ricardo S, Elizabethton
May, David P, Elizabethton
* Pearson, Elmer Tyler, Elizabethton
Rea, Gregory E, Elizabethton
Reece, Richard R, Elizabethton
* Slagle, David J, Elizabethton
Stewart, Robert Lynn, Elizabethton
Taylor, Tedford Steve, Elizabethton
Walter, Robert E, Elizabethton
Wells, Charles J, Elizabethton

CHATTANOOGA-HAMILTON COUNTY MEDICAL SOCIETY

Abell, James E, Hixson
Abramson, Jerome H, Chattanooga
Ackell, Adele B, Chattanooga
Adams, Carol J, Chattanooga
Adams, Charles C, Chattanooga
Adcock, Charles R, South Pittsburg
Aiken, Michael M, Chattanooga
* Aiken, William Prigmore, Chattanooga
Akin, Edgar Daniel, Chattanooga
Albritton, John Thomas, Chattanooga
Alisago, Hilda, Chattanooga
Allen, Billy Jason, Ooltewah
Allen, George E, Chattanooga
Allen, L Diane, Ooltewah

* Alper, Charles H, Chattanooga
Alvarez, Richard G, Chattanooga
Anderson Jr, George Edgar, Chattanooga
Anderson, Phillip, Chattanooga
Apareddy, Vijaya, Chattanooga
Apyan, Paul M, Hixson
Armstrong, Richard P, Chattanooga
Arnold, Coleman Lee, Chattanooga
* Arnold, Ira L, Chattanooga
Atkinson, Joseph Sprott, Chattanooga
Avery, Joel Eugene, Chattanooga
Bacon, Stuart Peter, Dayton
Balser, Jeffrey S, Signal Mountain
Banks Jr, Woodruff A, Chattanooga
Banks, Samuel Louis, Chattanooga
Bareddy, Venkata R R, Chattanooga
Barker, Donald E, Chattanooga
Barnes, David R, Chattanooga
Barnett III, Robert M, Chattanooga
Barron, Robin, Chattanooga
Beahm, Thomas M, Chattanooga
Bean, Mary L, Chattanooga
Beasley, Glenn A, Chattanooga
Bechard, Douglas L, Chattanooga
Bell, Calvin A, Chattanooga
Benton III, Oliver, Chattanooga
Berglund, Robert K, Chattanooga
* Besemann, E F, Signal Mountain
Binder, Samuel S, Chattanooga
Bivins, Linda K, Chattanooga
Blake, Charles Alan, Harrison
Blalock III, William E, Chattanooga
* Boatwright, Catherine A, Chattanooga
* Boatwright, Robert W, Chattanooga
Boaz III, Lonnie R, Chattanooga
Boaz, Valerie A, Chattanooga
Boehm, Peter Eric, Chattanooga
Boehm, Walter Michael, Chattanooga
Boiser, Anita Madria, Chattanooga
Boiser, Aristides L, Chattanooga
Bolinger, John McCallie, Chattanooga
Bolton, James P, Chattanooga
Bonder, Michael Ian, Chattanooga
Bookout, Mark William, East Ridge
Bowers Jr, Jemison O, Chattanooga
Bowers, Robert Eugene, Chattanooga
Bownds, Charles P, Pikeville
Boxell, John Frederick, Signal Mountain
Brackett, Richard W, Chattanooga
* Brackett, William David, Chattanooga
* Brannen, Frank S, Chattanooga
Breen, John M, Chattanooga
Brice, Charles Terry, Chattanooga
Bright III, Thomas C, Chattanooga
Broadstone, Paul A, Chattanooga
Brocker, Gerald K, Chattanooga
Brookshank, Ronald C, Chattanooga
Brown Jr, Teddy W, Chattanooga
Brown, Howard A, Chattanooga
Brown, Hugh P, Chattanooga
Brown, James W, Chattanooga
Brown, Thomas W, Chattanooga
Bryant, John Frank, Chattanooga
Bryant, Max Vincent, Chattanooga
Brzezienski, Mark A, Chattanooga
Buchanan Jr, Thomas F, Chattanooga
Buchner, William Francis, Chattanooga
* Burke, John Arthur, Hilton Head Isl, SC
Burns, Randel Phillip, Chattanooga
* Buttram Jr, William R, Chattanooga
Buttram, Thomas Latham, Chattanooga
Buttram, W Rees, Chattanooga
Caine Jr, Winston P, Chattanooga
Caldwell Jr, Thomas C, Hixson
Caldwell, Gary Blaine, Chattanooga
Campbell, Donald Ross, Chattanooga
* Campbell, William O'Neal, Chattanooga
Cannon, Don Allen, Chattanooga
Carr, Michael Grady, Chattanooga
Carter Jr, Louis L, Chattanooga
Catlin, Roger W, Chattanooga
Caughran, Bennett W, Chattanooga
Caughran, Donald G, Chattanooga
Ch'Ien, Lawrence Tien-Tso, Chattanooga
Chadwick, Antonia Marie, Chattanooga
* Chadwick, David Airey, Chattanooga
Chaffoo, Richard A K, Hixson
Chamberlain II, Morrow, Chattanooga
Chambless, Kurt Miller, Chattanooga
Chandra, Channappa, Hixson
Cheng, Tien H, Chattanooga
Cherry, Collin G, Chattanooga
Clark, Winston Graig, Memphis
Cleaveland, Clifton Rance, Chattanooga
Clements, Joel Benjamin, Chattanooga
Coddington, Robert Charles, Chattanooga
Cofer, Joseph B, Chattanooga
Cohen, Jonathan Stuart, Chattanooga
Cole, R Jeffrey, Chattanooga
Coles, Robert A, Chattanooga
Collins, David Newton, Chattanooga
Conn, Eric Hadley, Chattanooga
Constantinescu, Daniel, Chattanooga
* Corey Jr, James Hicks, Chattanooga
Cox, John Michael, Chattanooga
* Cox, Sue Clarke, Chattanooga
Craft, Phil Douglas, Chattanooga
Cranwell, John D, Chattanooga
Crawley Jr, James F, Chattanooga
Crawley Jr, William D, Chattanooga
Creel Jr, James Heaton, Chattanooga
* Crowell, John M, Chattanooga
* Currey, Joe T, Chattanooga
Currey, Thomas Woodruff, Chattanooga
Currin, Samuel M, Chattanooga
* Curtis, Thomas H, Ft Oglethorpe, GA
Daghlian, Bedros D, Chattanooga
Dalton, Howell B, Hixson
Daniell, Malcolm Butler, Chattanooga
Davidson, Deanna Starr, Chattanooga
Davis Jr, James Phillip, Chattanooga
Davis, Allan E, Chattanooga
* Davis, James Wilson, Signal Mountain
Davis, Jimmy B, Chattanooga
Davis, Larry W, Chattanooga
* Demos, Robert G, Chattanooga
Dickinson, Elizabeth B, Chattanooga
Dilworth, J Patrick, Chattanooga
Distefano, Deborah D, Chattanooga
Dodson, David Bryan, Chattanooga
* Donaldson, Richard B, Chattanooga
Donaldson, Richard William, Chattanooga
Donesky, Barry W, Chattanooga
Donowitz, Arlene, Chattanooga
Douglas, Michael, Chattanooga
Dowlen, Steven H, Chattanooga
Drake, James Robert, Chattanooga
Drake, Robert A, Chattanooga
Dreskin, Stephen V, Chattanooga
Dressler, Stanley Jay, Chattanooga
Drinnon, William D, Chattanooga
Duff, Siobhan A, Chattanooga
Duffy, Mary A, Chattanooga
Dugan, Philip Jerald, Chattanooga
Duncan, Victor A, Chattanooga
Duvoisin, Peter Marc, Chattanooga
Dwyer, William Knowles, Hixson
Dyer Jr, William Carl, Chattanooga
Eberle, David E, Chattanooga
Elias, Caroline K, Chattanooga
Elias, David B, Chattanooga
Ellis, Eric R, Chattanooga
Elrod, Bruce A, Ft Oglethorpe, GA
Enjeti, Suresh, Chattanooga
Estep, Dennis Paul, Ft Oglethorpe, GA
Evans, John Thomas, Chattanooga
Eyssen, James Edward, Chattanooga
Fain III, Guy F, Chattanooga
Farber, Sharon Nancy, Chattanooga
Farr, John F, Chattanooga
Feinberg, Edward B, Chattanooga
Feintuch, Theodore Ard, Chattanooga
Feist, William E, Chattanooga
Fennewald, Clarence L, Hixson
Ferguson, Kevin R, Chattanooga
Fernandez-Cruz, Paz A, Chattanooga
Fischer, Desmond L, Chattanooga
Fisher Jr, Daniel Franklin, Chattanooga
* Foley, James Mitchell, Chattanooga
* Ford, Augustus C, Chattanooga
* Fowler, William Robert, Chattanooga
Francis Jr, Henry M, Chattanooga
Frank, Stuart Ames, Chattanooga
Franklin III, Selmon T, Chattanooga
Franklin Jr, Donald B, Chattanooga
Franklin, John David, Chattanooga
Frizzell, Peter G, Chattanooga
* Frye Jr, Augustus H, Chattanooga
Fulbright, Thomas D, Chattanooga
Galbraith, John Neil, Chattanooga
Galindez, Elaine G, Chattanooga
Gazaleh, Shawn, Chattanooga
Geer, Michael R, Chattanooga
Gefter, Jeffrey W, Chattanooga
Gefter, Monica Aviva Leher, Chattanooga
Gentry, Carla F, Chattanooga
* Gibson Jr, George Clive, Chattanooga
* Giles Jr, Robert H, Signal Mountain
Ginsberg, Joel Fine, Chattanooga
* Goodlad, James K, Chattanooga
Goodman, Michael William, Signal Mountain
* Graham III, Frank B, Chattanooga
Graham, Gordon D, Chattanooga
Graves, Charles G, Dunlap
Greer, Michael Spencer, Chattanooga
Greer, William C, Chattanooga
Griggs, Lane B, Chattanooga
* Grissom, Wallace Doyle, Chattanooga
Hackworth Jr, John Bible, South Pittsburg
* Hagood Jr, Robert B, Chattanooga
Halfin, Aron, Hixson
* Hall, David Parks, Chattanooga
Hall, David R, Chattanooga
Hamilton, Dwight A, Chattanooga
Hammock, Mary Cannon, Chattanooga
Hanscom, Alfred C, Chattanooga
Haren, Vincent James, Chattanooga
Harless, Renee R, Chattanooga
Harnsberger, Benjamin Daniel, Chattanooga
Harvey, Hathaway K, Chattanooga
Haskins, Joseph M, Chattanooga
Havron Jr, William S, Chattanooga
* Havron, James Blackman, South Pittsburg
* Hawkins, Charles W, Chattanooga
* Hawkins, J Henry, Signal Mountain
Hawkins, Stephen S, Chattanooga
Hayes Jr, Cauley Wilbur, Chattanooga
Hayes, Thomas E, Ft Oglethorpe, GA
Hays III, Leonard J, Chattanooga
Head, Harold D, Chattanooga
Hedden, James W, Chattanooga
* Hellmann Sr, Robert S, Chattanooga
Hendrick, John P, Chattanooga
Hendricks, Paul M, Chattanooga
* Henning, Harold Berger, Chattanooga
* Henry, Warren B, Chattanooga
Herrick, C Neil, Chattanooga
Hertzog, Michael Scott, Chattanooga
Hetzel, Donald P, Chattanooga
Heywood III, Humphrey B, Chattanooga
Hicks, Biram C, Chattanooga
Hill, J Scott, Chattanooga
Hill, Russell F, Chattanooga
Hoback Jr, James William, Chattanooga
Hobgood, Donna K, Chattanooga
Hodnett, Cary G, Chattanooga
Hoeck, Jeffrey, Chattanooga
* Hofmeister, Richard G, Chattanooga
* Holliday Jr, Pope B, Signal Mountain
Hollie, Michael C, Chattanooga
Holsey, Tanja A, Chattanooga
Hong, Moon Wha, Chattanooga
* Hooper, Charles McDowell, Chattanooga
Hopper, Richard E, Chattanooga
Horton, Marshall, Chattanooga
Hua, Vin-Paul, Palmer
Hubbert, David E, Chattanooga
Huffman, David M, Chattanooga
Huffstutter, Joseph E, Chattanooga
Hughes, Alan D, Chattanooga
Hughes, Charles P, Chattanooga
Hunt, Noel Clarence, Chattanooga
* Hutcherson, W Powell, Chattanooga
Ingalls, Brian E, Chattanooga
Iskander, Karim Naguib, Rossville, GA
Jackson, Anthony W, Chattanooga
James, Dabney, Chattanooga
Jemison, David Marshall, Chattanooga
Jensen, Robert Lloyd, Collegedale
Jeong, Yune-Gill, Chattanooga
Johnson, Brian D, Chattanooga
Johnson, Edward Downey, Sale Creek
Johnson, Kavin J, Chattanooga
Johnston, John T, Chattanooga
Jones, Andrew R, Hixson
Jones, Gerald Isom, Chattanooga
* Jones, Harry E, Hilton Head, SC
Jones, Monica M, Chattanooga
Jones, Roger C, Chattanooga
Jones, Russell A, Chattanooga
Jordan, Cassell Amanda, Chattanooga
Kadrie, Hytham Ali, Chattanooga
Kaplan, Bruce A, Chattanooga
Kaplan, Hyman M, Chattanooga
Kelley, Joseph E, Chattanooga
* Killeffer, John Jacob, Signal Mountain
Kim, Wayne Y, Chattanooga
Kimsey, Charles W, Chattanooga
Kimsey, Frank Charles, Chattanooga
King Jr, Walter Hughey, Chattanooga
King, Dennis R, Chattanooga
Kirby, Charles A, Chattanooga
Knight, Frank H, Chattanooga
Kocacitak, Sahin Shan, Ft Oglethorpe, GA
Kort, Arthur A, Chattanooga
Kosanovich, Michael, Chattanooga
Krause, Richard Alan, Chattanooga
Krohn, Don R, Chattanooga
Kunda, Prabha A, Hixson
Kunda, Sarma R, Chattanooga
Kutzner, Waldemar, Collegedale
Kwentus, Joseph A, Chattanooga
Labrador Jr, Daniel P, Chattanooga
Labrador, Irene J, Chattanooga
Lanham, Gary R, Chattanooga
Lansford Jr, Frederick D, Chattanooga
Lantz, H Joseph, Chattanooga
Laramore, John Wade, Chattanooga
Lasky, Richard Samuel, Chattanooga
* Lassiter, Lawrence H, Chattanooga
* Lavecchia Jr, Joseph V, Chattanooga
Lawrence Jr, Harry M, Chattanooga
Lawwill Jr, Stewart, Chattanooga
Lechler, Donald R, Chattanooga
Lewis II, Jay Frederick, Chattanooga
Lewis, Allen David, Signal Mountain
Littell III, Lester F, Chattanooga
Little, James P, Signal Mountain
Liu, Chung-Yuen, Chattanooga
* Livingston, Philip H, Chattanooga
Long, Celeste S, Chattanooga
Long, Ira Morris, Chattanooga
Lowery-Smith, Lisa, Chattanooga
Loyd, James Alan, Signal Mountain
* Mabe, Robert E, Chattanooga
* MacGuire Jr, William B, Chattanooga
* MacNaughton Jr, David V, Chattanooga
Mackler, Donald F, Chattanooga
Majeed, Shahul J, Chattanooga
Mance, Cornelius J, Hixson
Mangan, Aloysius T, Chattanooga
Marsh, Clarence Bruce, Chattanooga
Marshall, Robert N, Chattanooga
Martin, Maria, Chattanooga
Mashchak, C Ann, Chattanooga
Massoud, Hossein, Chattanooga
Matthews, William Edwin, Chattanooga
* McCall, Cooper H, Chattanooga
* McCallie, David P, Chattanooga
McCallie, Jack B, Chattanooga
McCravey, John Wells, Chattanooga
McDonald Jr, Charles D, Chattanooga
McElheney, N Earl, Chattanooga
McGauley Jr, John R, Chattanooga
McGuire, Susan Kay, Chattanooga
* McKinney, James E, Chattanooga
McLean, George Wallace, Chattanooga
* McNeill, Thomas Pinckney, Chattanooga
Meadows III, William E, Chattanooga
Megison, Donald P, Chattanooga
Melvin, Terry, Chattanooga
Mercado, Avelino Velasco, Chattanooga
Metcalfe, James K, Chattanooga
Meyer, Carole M, Lafayette, GA
Michel, Terrel J, Chattanooga
* Milburn, Joseph, Signal Mountain
Miller, Frank J, Chattanooga
Miller, John E, Chattanooga
Miller, Phyllis A Edwards, Hixson
* Miller, Robert T, Chattanooga
Mills, Don Gilbert, Chattanooga
Mills, Gary E, Hixson
Minton, Joseph W, Chattanooga
Mitchell Jr, Jerry Wayne, Chattanooga

Mitchell, Allen M, Chattanooga
Molloy, Ronald Lynn, Chattanooga
* Moore, Hiram Beene, South Pittsburg
Morgan, John Ronald, Chattanooga
Morrison, Richard Clarke, Chattanooga
Morrison, Teresa A, Chattanooga
Morrow III, Sanford H, Chattanooga
Moses, Thomas Edward, Hixson
Moss, William Joel, Chattanooga
Motto, Joseph A, Chattanooga
Mullady III, Thomas F, Chattanooga
Murray, R Smith, Chattanooga
Mutter, Mitchell L, Chattanooga
* Myers Sr, Robert W, Chattanooga
Nagle, Lawrence S, Chattanooga
* Nathan, Marvin Myer, Chattanooga
* Nelson, Roger T, Wildwood, GA
* Newell Jr, Edward Thomas, Lookout Mountain
Nieves-Gonzalez, Alfredo, Chattanooga
Nipp, Ralph Elgin, Chattanooga
O'Connell, Fred H, Chattanooga
* O'Neal, David Medford, Chattanooga
Odom, Alan C, Chattanooga
Oh, Sai, Chattanooga
Ordonez, J Enrique, Chattanooga
Pancake, Bruce D, Hixon
Park, Ih Koo, Ft Oglethorpe, GA
Park, Jung Tae, Whitwell
Parker II, Samuel B, Chattanooga
Parker, Christine W, Chattanooga
Parkhurst, Walter D, Chattanooga
Patel, Haresh D, Chattanooga
Patel, Vijay P, Chattanooga
Patil, Vinit D, Chattanooga
* Patterson, Robert L, Chattanooga
Paty Jr, John Garland, Chattanooga
Payne, Doyce Gene, Chattanooga
Payne, Stanley Ross, Chattanooga
Pearce, Richard G, Chattanooga
Perez, Martin Allen, Chattanooga
Perkins, Thornton Delos, Chattanooga
Perrin, Millard Foy, Chattanooga
Peters, Richard A, Chattanooga
Peterson Jr, Walter A, Chattanooga
Peterson, Thomas R, Chattanooga
* Petty, Wesley Glenn, South Pittsburg
Phlegar, Robert F, Chattanooga
Plinke, Robert, Chattanooga
Pollock, Phillip Gary, Chattanooga
Pomerance, Glenn Noel, Chattanooga
Portera, Charles Anthony, Chattanooga
Potdar, Anilkumar S, Chattanooga
Proffitt, James D, Chattanooga
Proffitt, Wilma C, Signal Mountain
Puckett III, Walter, Chattanooga
* Quillian, Jesse O, Chattanooga
Quillian, Joe Anne, Chattanooga
Quinn, James Gilbert, Chattanooga
Ramsey, Millard Wray, Chattanooga
Rankine, David A, Chattanooga
Rawlings Jr, Maurice S, Chattanooga
* Rawlings Sr, Maurice S, Chattanooga
Reddy, Sudhakar K, Chattanooga
Redish, Martin, Chattanooga
Reeves, Michael L, Chattanooga
Reynolds, John Robert, Chattanooga
Reynolds, Thomas M, Chattanooga
Rich, John Stephen, Chattanooga
Richards, Theodore D, Chattanooga
Richmond Jr, James P, Chattanooga
Rimer, Thomas R, Chattanooga
Rissling, Deloris E, Chattanooga
Rittenberry Jr, Andrew B, Chattanooga
Roberts, Richard M, Chattanooga
Robinson, Neal Adams, Chattanooga
Roe, S Michael, Chattanooga
* Rogers, Alfred Perkins, Chattanooga
Rogers, Marilyn J, Chattanooga
Rose, Walter B, Chattanooga
Rowe, William Edward, Chattanooga
* Royal, James Richard, Chattanooga
Russell, William Lee, Chattanooga
Sadowitz, Richard H, Hixson
Sahaj, David A, Chattanooga
Salerno, David M, Chattanooga
* Santos, Benjamin G, Chattanooga
Sargent, Larry A, Chattanooga
Sarsfield, Jeffrey P, Ft Oglethorpe, GA
Sauceman, Stephen P, Chattanooga
Scanland, Jeanne A, Chattanooga
Schatzman, Nathan K, Chattanooga
Scheinberg, Marty, Chattanooga
Schmits, G Michael, Chattanooga
* Schwartz, Harold Alan, Chattanooga
Scott, Wayne, Chattanooga
Seal, Molly Elaine Roger, Chattanooga
Seiters Jr, George Z, Chattanooga
Seman, Charles Frederick, Chattanooga
Sendele, Robert L, Chattanooga
* Sheldon, John P, Signal Mountain
Shenouda, Adel Nemr, Chattanooga
Sherrell, James William, Chattanooga
Sherrill, Leroy, Chattanooga
Short, K Bruce, Chattanooga
Shuck III, Edwin H, Chattanooga
* Shuck Jr, Edwin H, Chattanooga
Shull, John A, Chattanooga
Sienknecht, Charles Wilson, Chattanooga
Simpson, Mark T, Hixson
* Sivils, George Lete, Chattanooga
* Smiley, Francis J, Chattanooga
Smith III, Archibald Y, Signal Mountain
* Smith Jr, Moore Jackson, Lookout Mountain
Smith, Bill M, Chattanooga
Smith, Daniel R, Chattanooga
Smith, Samuel Morgan, Chattanooga
* Smith, Stewart Phillip, Chattanooga
Snyder Jr, Paul Edgar, Chattanooga
Solomon, A Lee, Chattanooga
Somberg, Lewis B, Chattanooga
Soteres, Pete Spiros, Signal Mountain
* Sottong, Philipp Curtis, Signal Mountain
Soufleris, Adam J, Chattanooga
Spalding, Robert Tucker, Chattanooga
Spalding, Stephen D, Chattanooga
Spitalny, Neil Howard, Chattanooga
St Charles, Christopher S, Chattanooga
* Stafford, Florence E, Chattanooga
* Stappenbeck, Richard F, Chattanooga
Steele, Mark Alan, Chattanooga
* Stem, William Allison, Chattanooga
Sternbergh Jr, W Charles A, Chattanooga
* Stickley, Joseph Hardin, Chattanooga
Stohler, Dennis L, Chattanooga
* Stone, Harry Alfred, Chattanooga
Stone, Jeffrey L, South Pittsburg
Stone, John L, Chattanooga
Stone, Larry Dumas, Chattanooga
* Stoneburner, Wesley H, Lookout Mountain
Strait, Timothy A, Chattanooga
Stratienko, Alexander A, Chattanooga
* Strickland Jr, J Ed, Longboat Key, FL
Stroud, Mary E Thompson, Chattanooga
Stubblefield, Steven B, Chattanooga
Suggs III, Charles L, Chattanooga
* Suggs Jr, Charles L, Chattanooga
Sumida, Mark S, Chattanooga
Susong, Charles Rodney, Hixson
* Swann Jr, Nat H, Signal Mountain
Swiff, Rebecca M, Harrison
* Swift, Charles Ray, Chattanooga
* Szczukowski, Myron J, Chattanooga
Talbert, Timothy, Chattanooga
Talley, Mark A, Chattanooga
Tantibhachai, Sithipol, Dayton
Taslimi, Mark, Chattanooga
* Taylor, George N, Ruston, LA
Taylor, Robert Creston, Signal Mountain
Tejani, Sushila N, Chattanooga
Tepley, Lynn B, Chattanooga
* Tepper, Bernard, Chattanooga
Thomas, Anita J, Chattanooga
Thomas, Steven Michael, Chattanooga
Thomas, Victor J, Chattanooga
* Thompson, Paul C, Chattanooga
Thorner, Donald R, Chattanooga
Thow, George Bruce, Chattanooga
Tin, Pe Than, Chattanooga
Tiongson, Rodrigo Verzosa, Ft Oglethorpe, GA
Tomasi, Ana M, Chattanooga
Trask, Shawn D, Ft Oglethorpe, GA
Turner, David Herschel, Chattanooga
Turner, Sharlinda B, Harrison
* Ulin, A Steven, Chattanooga
* Ulin, Louis, Chattanooga
Van Horn, William A, Chattanooga
* Vance, Minnie Ratliff, Chattanooga
Vanderbilt, Douglas L, Chattanooga
Vechinski, Thomas O, Chattanooga
Vernon, Andrew N, Chattanooga
Vickery, Christopher L, Chattanooga
Viscomi, Vincent A, Chattanooga
Visser, Jeffrey D, Chattanooga
* Vlasis, Gus John, Chattanooga
VonWerssowetz, A J, Chattanooga
* Walton, Harry Lee, Lookout Mountain
Waters Jr, Clyde C, Chattanooga
Watkins, Steven L, Chattanooga
Watlington, Joseph T, Chattanooga
Weathers Jr, William, Lookout Mountain
Weldon, Thomas Darrell, Ringgold, GA
Weng, Jen-Tsoh, Chattanooga
Wessels, Izak F, Chattanooga
* Westermeyer, Marion W, Loma Linda, CA
Wheelock, Argil Jerry, Chattanooga
* Whitaker Jr, L Spires, Lookout Mountain, GA
White, J Johnny, Chattanooga
White, Jay P, Chattanooga
White, Judith L, Chattanooga
* White, Phil Joe, Hixson
White, William Otis, Chattanooga
Williams III, Sam Jones, Chattanooga
Williams, Robert Henry, Chattanooga
Witherspoon, Laura E, Chattanooga
Woody, Jonathan D, Chattanooga
Wright Jr, Kinsman E, Chattanooga
Yium, Jackson Joe, Chattanooga
Yood, Stephen H, Chattanooga
Young, Christopher E, Chattanooga
* Young, George G, Chattanooga
* Young, Marion Marshall, Chattanooga
Younger III, Robert E, Chattanooga

COCKE COUNTY MEDICAL SOCIETY

Brawley, Bolling W, Newport
Brock, Karen Reno, Parrottsville
Capparelli, Edward W, Parrottsville
Conway, Thomas W, Newport
Daniel, Anton Christopher, Newport
Garbarino Jr, A J, Newport
Gray Jr, McDonald, Newport
Hill, Kenneth L, White Pine
Hood, Michael T, Newport
Huff, Mary M, Newport
Johnson II, H Kenneth, Newport
Kickliter, David J, Newport
McConnell, David H, Newport
Sturdivant, Tara, Knoxville
Valentine Jr, Fred M, Newport

COFFEE COUNTY MEDICAL SOCIETY

Anderson, Charles E, Tullahoma
Bard, Ralph M, Tullahoma
Bard, Shirley A, Tullahoma
Binion Jr, Lamar Clinton, Manchester
Birdwell, Joel Stanley, Tullahoma
Breeden, Richard Lee, Tullahoma
* Brickell Jr, Ralph L, Tullahoma
* Canon, Robert Maurice, Tullahoma
Cole, Richard Clinton, Decherd
Cowan, Richard H, Tullahoma
Craig, Allen R, Tullahoma
Davis, Glenn Alan, Manchester
* Farrar, Clarence H, Knoxville
Fishbein, Richard E, Tullahoma
Freeman, William J, Tullahoma
* Galbraith, Bruce E, Tullahoma
George, Wilburn E, Tullahoma
* Harris, George A, Manchester
* Harvey, Charles Ben, Tullahoma
Hyman, Daniel Michael, Tullahoma
Kennedy, Jerry Ledford, Tullahoma
Kim, Ho Kyun, Tullahoma
Krick, Joseph G, Tullahoma
Krishna, Gulla Bala, Tullahoma
Lindsay, James, Tullahoma
Lovelady, Gary Keith, Tullahoma
Mahan, Ben Bob, Tullahoma
Milam, William M, Tullahoma
Norris, Hunter Willingham, Tullahoma
Patsimas, John D, Tullahoma
Ramprasad, Mittur N, Tullahoma
Ridley, Robert Wendell, Tullahoma
Robison, B Keith, Tullahoma
Russell, Mark Roddy, Tullahoma
Sanders IV, William J, Tullahoma
Sethi, Brahm D, Manchester
Sethi, Chander M, Manchester
Seyler, Clifford Alan, Tullahoma
* Snoddy, Claude Collins, Tullahoma
Tepedino, Michael J, Tullahoma
Vallejo, Francisco C, Tullahoma
Vallejo, Luz A, Tullahoma
Vivo, Josephe A, Manchester
* Webb, Charles Harry, Tullahoma
Wieck, Dennis Joseph, Tullahoma
Yang, Harrison Y, Manchester
* Young, Coulter Smartt, Manchester
Yu, Ja Nan, Manchester

CONSOLIDATED MEDICAL ASSEMBLY OF WEST TENNESSEE

Aguirre, Antonio, Jackson
Alexander, Clyde Vinson, Jackson
Anderson, Charles B, Jackson
Appleton Jr, James Roy, Jackson
Appleton, Nicolas Burns, Milan
Asserson Jr, Bowen, Jackson
Atkins, Jerry Franklin, Huntingdon
Bakeer, Mohammed Said, Selmer
* Baker, Lt Col John Q, Scottsdale, AZ
Ball, John J, Jackson
* Ballard, Thomas K, Jackson
* Barham, Harvey Haywood, Bolivar
* Barker, Edward C, Trenton
Barnes Jr, James Walter, Jackson
Barnett II, Hugh Glenn, Jackson
* Barnett, Robert J, Jackson
Bateman, Mark Roy, Jackson
Bicknell, Sidney Lane, Jackson
Bingham, Ron Craig, Jackson
Bishop, John Myron, Somerville
Bond Jr, Elias King, Jackson
* Booth, Jack H, Jackson
Bratton, Chris H, Lexington
Brooks Jr, Nathaniel, Jackson
Brown II, Joe Lawrence, Jackson
Brown, Jane Warne, Jackson
Brownstein, Richard Earl, Jackson
Brueggeman, Michael Wayne, Jackson
Bryan, William David, Jackson
Burleson, David G, Jackson
* Burnett, William Franklin, Jackson
* Burrus Jr, Swan, Jackson
Cargile, Kenneth Rowland, Jackson
Carruth, Cynthia, Jackson
Carruth, Larry, Jackson
* Chandler, John H, Jackson
Chary, Kandala Ram, Jackson
Chase, Barton A, Ramer
* Clark, Curtis B, Sheridan, AR
Cobb, R Michael, Jackson
Couch, Billy Lanier, Humboldt
Cox, Charles William, Jackson
Craig Jr, James Thomas, Jackson
Craig, Carol Shannon, Jackson
Craig, Sterling Ruffin, Jackson
Crane, Patricia G, Jackson
Creech, Erika H, Jackson
Crenshaw Jr, James, Jackson
Crenshaw, James Harris, Humboldt
Crenshaw, Thomas Malcolm, Humboldt
* Crook, William Grant, Jackson
Cunningham, Louis Ernest, Jackson
Curlin, John Paschal, Jackson
Currie, Dean Paul, Jackson
Damian, Myrna Aquino, Jackson
DeJarnatt, Alan Carter, Jackson
DeSouza, William Celestino, Rutherford
Deming, Wood M, Jackson
Diffee, James, Jackson
Dinkins, Ruth Eleanor, Medina
Donnell, James Harold, Jackson
* Douglass Jr, Roy A, Jackson
* Douglass, Jack E, Jackson
Dowling, Clarey R, Brownsville
Dunavant, Robert Wayne, Bolivar
Dunnebacke, Robert H, Jackson
Duval Jr, J William, Jackson
* Edwards, Edwin Wiltz, Jackson

Edwards, George T, Jackson
* Edwards, Nicholas Henry, Grand Junction
Ellis Jr, James Lee, Jackson
* Ellis, John W, Dyer
Ellis, Thomas W, Jackson
Epps, John Michael, Jackson
Erb, Blair D, Jackson
Everett, John E, Jackson
* Fields, James O, Milan
Figueroa, Edduyn A, Jackson
Fly, Randy, Jackson
Foster, Charles Stephen, Jackson
Francisco, Susan Marie, Jackson
* Friedman, Fred M, Jackson
Frost, Charles Lester, Bolivar
Fuller, James Walker, Inverness, FL
Garey, David L, Jackson
Garrard Jr, Clifford L, Jackson
Gilroy Jr, Robert Johnson, Jackson
Goodwin, Stephen C, Jackson
* Graves, Oliver Haltom, Jackson
* Gray, Alden Harrelson, Kenton
Gray, J Paul, Jackson
Gray, Kevin G, Jackson
Grimball, Arthur, Jackson
* Guyton, Joe L, Jackson
* Hall, James Wilson, Trenton
Hall, Joe I, Jackson
Hall, Robert Crombie, Jackson
Hammond, Jere D, Jackson
Hammond, Stephen, Jackson
Harmon, Harvey, Jackson
* Harrison, Walton W, Jackson
Hawkins Jr, Raymond, Somerville
Hazlehurst Jr, George E, Jackson
Henderson, Reggie A, Lexington
Herron, Bruce Emerson, Jackson
Herron, Charles Burkhead, Jackson
Hertz Jr, Charles S, Jackson
Higgs, Bobby Clark, Jackson
* Hill, Robert S, Jackson
Hockaday Jr, Edward Everette, Jackson
Holancin, John R, McKenzie
Hollis, Robert A, Jackson
* Holmes, Chester L, Ellison Bay, WI
Homra, Ronald A, Jackson
Honeycutt, Daniel Lee, Jackson
Hopkins, Sharon D, Jackson
Hornsby, Jerry, Jackson
House, Ben Fred, Jackson
Houston, Benny Cortez, Jackson
* Hubbard, George Baker, Jackson
* Hudson III, Bernard O'Grady, Jackson
* Humphrey, Tom Neal, Selmer
Humphreys, T James, Jackson
Jenkins, John M, Jackson
Joglekar, Shirish S, Jackson
Johnson, Jennifer, Jackson
Jones, Kent L, Jackson
Jordan, Frank E, Jackson
Josovitz, Mark, Middleton
Kee, Jimmy W, Jackson
Kendall, John Allen, Jackson
King, Darrel Chambers, Henderson
King, James D, Selmer
Kirby, Keith, Humboldt
Kirkland, Ronald H, Jackson
* Koonce, Duval Holtzclaw, Jackson
LaFont, Donald Sharp, Jackson
* Langdon Jr, James A, Jackson
Larsen, David, Jackson
Lemus, Parada J, Huntingdon
Lents, Russell S, Jackson
Lewis, Donald Ray, Jackson
Lewis, Marvin, Jackson
Linder, Tim, Lexington
* Lowry, Maurice N, Lexington
Maley, Bruce B, Jackson
Mandle, Robert Bennie, Jackson
Matthews, John T, Jackson
* Mayfield, Russell W, Bells
McAdoo, Michael A, Milan
McAfee, William Cleveland, Jackson
McCall, Charles, Jackson
* McCallum, Oscar M, Henderson
McCrudden, Brian E, Jackson
* McIver, Harold Thomas, Jackson
McKnight, Donald, Jackson
McKnight, Frank S, Somerville
Meriwether, John Henning, Jackson
Middleton, Augustus L, Jackson
Miller Jr, Jesse A, Jackson
Misulis, Karl E, Jackson
Morgan III, James O, Jackson
Muir, Eric, Jackson
* Myhr, Lamb Bolton, Beech Bluff
Narayana, B, Huntingdon
Neblett, John W, Jackson
Nelson, Michael William, Jackson
Oberg, Richard A, Jackson
Owens, Scott Emerson, Jackson
Pakis Jr, George, Jackson
Palmer Jr, Edmund T, Jackson
Patel, Hasmukh Dahyabhai, Trenton
Patel, Pravin, Bolivar
Payne, James Allen, Jackson
Pechacek, Alan, Jackson
Peeler, Harry Lee, Selmer
* Pennington, Frank R, Jackson
Permenter, William D, Jackson
Peters, Jerry D, Jackson
Phillips, Tony N, Jackson
Price Jr, James Alfred, Jackson
Raby Jr, Lon F, Jackson
Ramer Jr, Warren Carlton, Lexington
Reese, Eugene P, Jackson
Rhea Jr, Karl, Somerville
Rhea, Karl Byington, Somerville
Rhear, R Wayne, Jackson
Rheney, Molly McLemore, Jackson
* Richards, Aubrey, Bolivar
* Riddler, John Garth, Jackson
Robbins, Russell Hugh, Jackson
* Roberts, William H, Jackson
Rogers, Lisa Marie, Jackson
Routon, William Robert, Humboldt
Rowland, Joseph Perry, Jackson
Schlamp, Allen Lee, Jackson
Schwartz, Paul E, Jackson
Scott, Augustus Barnett, Jackson
Scott, Mary Lynn, Jackson
Sentell, Kevin, Jackson
Sharpe Jr, Benjamin Weeks, Jackson
Shaw Jr, John L, Jackson
Sheppard Jr, Lee C, Jackson
Sioson, Pricilla, Jackson
Sisco, Stephen Ray, Jackson
Smelser, Michael Harding, Adamsville
Smith, Clyde E, Jackson
* Smith, Harris L, Jackson
Smith, James Hagy, Selmer
Smith, Robert Joseph, Jackson
Smith, Theresa Troutt, Jackson
Souder, Bob Tyler, Jackson
Spalding, Alanson R, Jackson
Sparrow, John G, Jackson
Spencer, Donald R, Brownsville
Spruill Jr, James Henry, Jackson
* Stauffer, Charles C, Jackson
Stepp Jr, William P, Jackson
* Stewart, David Earl, Brownsville
Stonecipher, Lowell F, Jackson
* Story, William Charles, Jackson
Stripling, Jack Clements, Lexington
Swindle, James Tyler, Jackson
Taylor, Jackie L, Jackson
Taylor, Ronald F, Jackson
Thomas, George Emanuel, Jackson
Thomas, James Louis, Jackson
Tillman, Ronald C, Alamo
Torstrick, Robert F, Jackson
Tozer, Kenneth, Milan
* Truex, S Allen, Jackson
Tucker Jr, Robert Taylor, Jackson
Twilla, Ronald G, Milan
Underwood, David W, Jackson
Vegors, Robert A, Jackson
Vinson, Harold Wallace, Selmer
Wainscott, William Keith, Jackson
Warmbrod Jr, James G, Jackson
Warren, Kenneth William, Jackson
Webb, Jimmy Franklin, Jackson
Welles III, Edward Hunter, Jackson
White Jr, Charles, Lexington
White, Charles Wesley, Lexington
White, Jerald Wayne, Brownsville
* White, Lamar Arthur, Friendship
* Williams Jr, Allen N, Jackson
* Williams, James Henry, Milan
Williams, James Larry, Trenton
* Williams, Philip Gray, Milan
Williams, Richard Larry, Jackson
Williams, William Keith, Jackson
Williamson III, F E, Jackson
Wilson, Donald Allen, Jackson
Wilson, R L, Henderson
Winkler, Volker Gert, McKenzie
Witherington III, James B, Jackson
Woods Jr, William H, Jackson
Woods, Arthur M, Jackson
Woods, John, Jackson
Wright III, Lucius F, Jackson
* Wylie, Paul Eve, Jackson
Yarbro, George, Jackson
* Yarbro, Harold R, Jackson
Yarbro, Scott, Jackson

CUMBERLAND COUNTY MEDICAL SOCIETY

Baylosis, Roberto B, Crossville
Bell, Christopher M, Crossville
Bilbrey, Richard Lee, Crossville
Bise, Stanley L, Crossville
Breyer, David Paul, Crossville
Brown, Barry J, Crossville
Callis, James Taylor, Crossville
* Campbell Jr, James T, Crossville
Campbell, David Edward, Crossville
Carpenter, Douglas R, Crossville
Clark, Jack Crowley, Knoxville
Clayton, Thomas Edward, Crossville
* Cravens, R Gene, Crossville
* Deatherage, Philip M, Crossville
* Dougherty, John H, Fairfield Glade
Duer, Carl Thomas, Crossville
Durham, Beatrice L, Crossville
* Ervin Jr, Paul A, Crossville
* Evans, William Elkinton, Crossville
Fox, Mark Alan, Crossville
Guthrie, Fred A, Crossville
Hall, Danny, Crossville
Ivey, Donathan Miles, Crossville
* Ivey, R Donathan, Crossville
Kimbrell, Keith M, Crossville
Lee, Mark K, Crossville
Lindsay, Jack Wasson, Fort Myers, FL
Litchford, David Williams, Crossville
Mayfield, Robert D, Crossville
Monaghan, T Gavin, Crossville
* Munson, Frederick William, Crossville
Nichols, Robert, Crossville
Olaechea, Reinaldo A, Crossville
Patterson, Larry E, Crossville
Perrigan, M Dale, Crossville
Petty, Elizabeth M, Crossville
Pick, Susan N, Crossville
Pitts, David W, Crossville
Reed, Larry Dewayne, Crossville
* Robertson, Joseph D, Crossville
Sherrill, John Branson, Crossville
Simpson, Jon A, Crossville
* Wallace, Joe Kenneth, Crossville
Wood Jr, Robert Hancock, Crossville

DEKALB COUNTY MEDICAL SOCIETY

Blevins, Melvin L, Smithville
Cripps, Hugh Don, Smithville
Darrah, David Edward, Alexandria
Dingle, Denise R, Smithville
Hooper, Doug G, Smithville
Maynard, Odis Jerry, Smithville
Rhody, Jack R, Smithville

DICKSON COUNTY MEDICAL SOCIETY

Anderson, Stanley Martin, Dickson
Bell Jr, Walter A, Dickson
Close, Louis Ward, Dickson
Collins, Clyde E, Dickson
* Cook, Mary Baxter, Nashville
Drinnen, Daniel Brooks, Dickson
Gordon, Jeffrey, Dickson
Gorzny, Jan M, Dickson
Hayes, Phillip Walton, Dickson
Hutchens, Zachary McVey, Centerville
* Jackson, James T, Dickson
Jackson, James W, Dickson
Luplow, Rolland, Dickson
Mahan, Marcelle, Dickson
Mani, Venk, Dickson
Mills, Van F, Dickson
Pham Ngoc Thuan, Robert, Dickson
Salyer, John R, Dickson
Sexton, John Thomas, Centerville
Smith, Bobby Joel, Dickson
Thompson, Bill, Dickson

FENTRESS COUNTY MEDICAL SOCIETY

Allred, Baley Fred, Jamestown
Allred, Jonathan David, Jamestown
Carroll, Ramon Leonard, Jamestown
Joshi, Dilip N, Jamestown
Smith, Jack Calvin, Jamestown
* Turner, Shelby Oscar, Clarkrange

FRANKLIN COUNTY MEDICAL SOCIETY

Bagby Jr, Richard A, Winchester
Becker, Kenneth G, Winchester
Boyanton, Lia Cecilia, Estill Springs
Boyanton, Walter J, Estill Springs
Carroll, Corina Field, Winchester
Crowson Jr, Lawrence B, Winchester
Fort Jr, Dudley Clark, St Andrews
Frye, Jeffrey L, Winchester
Fujiyoshi, Carol Aiko, Clarksville
Gammada, Epraim Birratu, Winchester
Greer, Patrick Roddy, Winchester
Hood, Dewey Woodrow, Decherd
Horton, Craig M, Winchester
Hubbard, Rex, Winchester
* Johnson, Gerald Eugene, Winchester
Petrilla, Diane L, Sewanee
Petrochko, Nicholas, Winchester
Rudolph, Councill Courtland, Clarksville
Smith, Thomas Anderson, Winchester
Stensby, James G, Winchester
Stockton, David L, Tullahoma
Templeton, John Waggoner, Winchester
Williams, Jennie Lynn, Decherd
Worthington, Bryan, Winchester
Zimmerman, Thomas F, Winchester

GILES COUNTY MEDICAL SOCIETY

* Agee, Robert B, Pulaski
Burger, Charles W, Pulaski
Cox, Malcolm A, Pulaski
Davis Jr, Buford Preston, Pulaski
Fentress, J Vance, Ardmore
Foronda, Armando Cabot, Pulaski
Haney, Charles D, Pulaski
Murrey, William Harwell, Pulaski
Owings, Jon M, Pulaski
Savage, Stephen Ross, Pulaski
Ziauddin, Mohamed, Pulaski

GREENE COUNTY MEDICAL SOCIETY

Ashe, Walter D, Greeneville
Austin Jr, Joseph W, Greeneville
Austin, Maynard Wade, Greeneville
Barnes, Lloyd Rogers, Greeneville
Bean, Michael William, Greeneville
Beckner III, Thomas Folsom, Greeneville
Boys, John C, Greeneville
Bridges, William Robert, Greeneville
Buckman, David D, Greeneville
Chapman Jr, Walter Clay, Greeneville
Cobble, Douglas Catron, Greeneville
Cole, Ronald Arthur, Greeneville
Diez D'Aux, Robert C, Greeneville
Easterly Jr, James F, Greeneville
Ellenburg Jr, Luke Lamar, Greeneville
* Ellenburg, Luke L, Greeneville
Flohr, Robert Stephen, Greeneville
* Gibson, Rae B, Greeneville
Giles, Stanley A, Greeneville
Hartsell, Michael H, Greeneville
Hawthorne, Jo Lynn, Greeneville

Holt, Bevley D, Greeneville
Hoppe, Gordon Paul, Greeneville
* Horner, Nathan P, Greeneville
Keebler, Ben Jennings, Greeneville
Lorenz, John Robert, Greeneville
Manning, Kim Marie, Greeneville
Marsa, Gordon L, Greeneville
Mason, Walter Lawrence, Greeneville
Mathews Jr, Kenneth M, Greeneville
Mathiesen Jr, K Marlin, Greeneville
McKinney, James Ray, Greeneville
McNiel, Frank H, Mosheim
McNiel, Janet, Mosheim
Menz, Michael Joseph, Greeneville
Metcalf III, Dee Lamar, Greeneville
Michals, Herbert James, Kingsport
Montgomery, Charles Alexander, Greeneville
Myers, Frederick J, Greeneville
Nelson, Harry C, Greeneville
Odell, Michael J, Greeneville
Patterson, David Oscar, Greeneville
Reardon, Peter, Greeneville
* Reviere, Calvin Barton, Greeneville
Roberts, Andy Alfred, Greeneville
Rodgers, James Steven, Greeneville
Scott, William Joseph, Greeneville
Sen, Aninadya Kumar, Greeneville
Shaw, John Louis, Greeneville
Smead, William J, Greeneville
Stanley III, Richard E, Greeneville
Strange, E Brad, Greeneville
Strimer, Robert M, Greeneville
Sullivan Jr, Timothy J, Greeneville
Susong, Kenneth Clark, Greeneville
Swarner, Orville Ward, Greeneville
Turk, Ronald E, Greeneville
Villeneuve, Victor, Greeneville
Webster, Thomas Moore, Greeneville

HARDIN COUNTY MEDICAL SOCIETY

* Blankenship Jr, H, Savannah
Churchwell, A Grigg, Savannah
Greene, Richard S, Savannah
Lard, Janet Kaye, Savannah
Lay, John Daniel, Savannah
Rao, Gade, Savannah
Roe, Thomas Vance, Savannah
Smith, Michael L, Savannah
Thomas, Howard W, Savannah

HAWKINS COUNTY MEDICAL SOCIETY

* Baird Jr, Renfro B, Mooresburg
* Gibbons, William E, Rogersville
* Goforth, Walter L, Rogersville
Goyeau, Francis, Rogersville
* Huffman, Charles D, Rogersville
Marcelo, Bernardino D, Rogersville
Marcelo, Josephefina Q, Rogersville
Verzosa, Manuel S, Rogersville
Wilson, Stephen K, Rogersville

HENRY COUNTY MEDICAL SOCIETY

Adams, Robert D, Paris
Campbell, William Russell, Paris
Duckworth, Hugh, Paris
Garrett, Glen Sanders, Paris
Griffey Jr, Walter P, Paris
Guerra, Julio Cesar, Paris
Gulish, Eugene F, Paris
Hamp, Dirk, Paris
Harrison, Terry O, Paris
Kielty, David Walter, Paris
Kornfeld, William, Paris
McGee, James W, Paris
* McIntosh, Barry Park, Paris
* Mobley Jr, Emmett P, Paris
Mobley Jr, Joe Dick, Paris
* Neumann Sr, John E, Paris
Norman, Dwight Michael, Paris
Robertson, James Buford, Paris
Selby, Debra S, Paris
* Sleadd, Frank Bland, Paris
Summers, Douglas Scott, Paris
Swanson, Roger Thomas, Paris
Tusa, Vince Charles, Paris
Walker, Charles Allen, Paris
Wood, Thomas Charles, Paris

JACKSON COUNTY MEDICAL SOCIETY

Byrne, Gregory L, Gainesboro
Dudney, Elijah Morgan, Gainesboro

KNOXVILLE ACADEMY OF MEDICINE

Aaby, Gene Victor, Knoxville
* Acker Jr, Joseph E, Knoxville
Acker, James Joseph, Knoxville
Acker, John H, Knoxville
Acuff, William Joseph, Knoxville
Adams, Arthur F, Knoxville
Adams, Linas J, Knoxville
Adams, Terry Lee, Knoxville
Akin, Hobart E, Knoxville
Alexander, J Sidney, Knoxville
Ambrose, Paul Seabrook, Knoxville
Ambrosia, John M, Knoxville
Anderson, Mark D, Knoxville
Anderson, Mark E, Knoxville
Anderson, Thomas I, Knoxville
Ange, Charles Gilmer, Knoxville
Ange, David Westley, Knoxville
Annand, David W, Knoxville
Antonucci, Richard A, Knoxville
Arnett III, John D, Knoxville
Arnold Jr, Henry Grady, Knoxville
Arwood, Don C, Knoxville
Austin, Bret L, Knoxville
Austin, Stephen B, Knoxville
* Avera, John W, Knoxville
* Avery, Bebe Anne Bass, Knoxville
Avery, Robert Bruce, Knoxville
Avery, Shirley Bannister, Knoxville
Ayres, Mike, Knoxville
Baddour Jr, George R, Knoxville
Baddour, Larry M, Townsend
Bailey, W Kevin, Knoxville
* Baker Jr, Martin Ross, Knoxville
Baker Jr, Paul D, Knoxville
Baker, James W, Knoxville
* Bankston, Floyd N, Knoxville
Barnes III, Robert L, Knoxville
Barnett, Charles F, Knoxville
Barron, Freddie T, Knoxville
Barron, Marjorie B, Knoxville
Beahm, Walter Clarence, Knoxville
* Beals, Daniel Franklin, Knoxville
Beals, Joe Duncan, Knoxville
Bedwell, William Howard, Knoxville
Beeler, T Craig, Knoxville
Bell III, W Reid, Knoxville
Bell, John Henry, Knoxville
Bell, John L, Knoxville
* Bell, Spencer Y, Knoxville
Bellingrath, Len F, Knoxville
Bellomy, Bruce B, Knoxville
* Benedict, Walter Hanford, Knoxville
Benhayon, Jack, Knoxville
Bennett, Frederick S, Knoxville
Benton, James Carl, Knoxville
Bevelhimer, Ann S, Knoxville
Biggs, Monte Bruce, Knoxville
Birdwell, David Allen, Oak Ridge
Bishop Jr, Archer W, Knoxville
Bishop, Harry Louis, Knoxville
Black Jr, Joe William, Knoxville
Black, William D, Knoxville
* Blair, Corrie, Loudon
Blake Jr, John R, Knoxville
Blake, Lynn French, Knoxville
Blakeley, Russell R, Knoxville
Blossom, Gerald Lee, Knoxville
Bogartz, Leon Jacob, Knoxville
Bolin, William R, Knoxville
Bost, William Eugene, Knoxville
* Boswell, Wade H, Knoxville
Boyce, Stephen G, Knoxville
Brabson, Leonard Allison, Knoxville
* Bradsher Jr, Jacob T, Knoxville
Brakebill, Larry C, Knoxville
* Branson, Aubra David, Knoxville
Bresee, Stuart J, Knoxville
Brewer, Michelle L, Knoxville
Brig, Raymond, Knoxville
Briggs, Richard M, Knoxville
* Brimi, Robert John, Knoxville
Brinner, Richard A, Knoxville
Britt, James Clyde, Knoxville
Broady, Joseph Leroy, Knoxville
Brooks, R Christopher, Knoxville
Brooksbank, Roger A, Knoxville
Broome, Monroe A, Knoxville
Browder, Joe H, Knoxville
Browder, John Franklin, Knoxville
Brown IV, Lytle, Knoxville
* Brown Jr, Frederick F, Knoxville
Brown, Howard R, Knoxville
Brown, Jeffrey I, Knoxville
Brown, Leonard W, Knoxville
Bryan, Ronald W, Knoxville
Bullock, Pamela Stephens, Knoxville
Buonocore, Edward, Knoxville
Burdette, James A, Lenoir City
Burkhart, James M, Knoxville
* Burkhart, John H, Knoxville
Burkhart, John McLain, Knoxville
Burkhart, William L, Knoxville
Burns Jr, E Brantley, Knoxville
Burns Jr, James L, Knoxville
Bushkell, Lawrence L, Knoxville
Bushore, John Thomas, Knoxville
Byrd, William George, Knoxville
* Campbell Jr, John E, Knoxville
Campbell, John Wilson, Knoxville
Campbell, Morris Dean, Knoxville
Campbell, Philip D, Knoxville
Campbell, Willard B, Knoxville
Capps, Robert J, Knoxville
* Carlomagno, Oscar Mario, Knoxville
Carlson Jr, C Sanford, Knoxville
* Carlson, C Sanford, Knoxville
Carpenter, Kenneth B, Knoxville
* Carr, Frederick W, Knoxville
Carter, Peter W, Knoxville
Cates Jr, Harold E, Knoxville
Cauble, Dan W, Knoxville
* Caylor, Lloyd G, Knoxville
Chaudhuri, Udit, Knoxville
Cherry, Ronald R, Knoxville
Chesney, John Tucker, Knoxville
* Chesney, Luther W, Knoxville
Chironna, Robert L, Knoxville
Chobanian, Sarkis J, Knoxville
* Christenberry Jr, Henry E, Knoxville
Christenberry Jr, K W, Knoxville
* Christian, Henry S, Knoxville
Christiansen, Deborah J, Knoxville
Chun, Joseph T, Knoxville
Clark Jr, Jack Crowley, Knoxville
Cloud, William Wiley, Knoxville
Cohn, Richard A, Knoxville
Cole, Robert Reland, Knoxville
Collier Jr, Robert Hoyal, Knoxville
Collins, Mary Patricia, Knoxville
* Collmann, Irving Reid, Knoxville
* Comas, Frank Vilanova, Knoxville
* Congdon, Charles C, Oak Ridge
Congleton III, Lee, Knoxville
Conley, Dean Raymond, Knoxville
* Conner, Edward D, Knoxville
Cook, L Nichols, Knoxville
Cooley, Caroline E, Knoxville
Cooper Jr, John Harrison, Knoxville
Cooper, John Franklin, Knoxville
Copas, Pleas R, Knoxville
* Corey, David Anthony, Knoxville
Coughlin Jr, Dennis, Knoxville
Covino, Brian M, Knoxville
Cox, David Allan, Knoxville
Crawley, Robert A, Knoxville
Creutzinger, David J, Knoxville
Cross, Stephanie B, Knoxville
* Crumley, Joe C, Knoxville
Cunningham, Leslie B, Knoxville
Dabbs, Randal L, Knoxville
* Dalton, Morris Norton, Knoxville
* Davis, Lloyd Cleveland, Knoxville
Davis, Robert S, Knoxville
Davis, Stephen C, Knoxville
Dawson, John T, Knoxville
DeBusk, Charles H, New Tazewell
DeCristofaro, Claire, Johns Island, SC
DeFiore Jr, Joseph Charles, Knoxville
DeLeese, Joseph S, Knoxville
DeLozier, Joseph B, Knoxville
DePersio, John E, Knoxville
DePersio, Richard J, Knoxville
Degnan, Jonathan N, Knoxville
Demers, Robert G, Knoxville
Denneny, Elise C, Knoxville
Dickson, Mitchell A, Knoxville
* Diddle, Albert W, Knoxville
Dill, Stephen H, Knoxville
Dilworth, Lee R, Knoxville
* Dobbins, William T, Loudon
Dobbs, Tracy W, Knoxville
Dodd, Susan Price, Knoxville
Doiron, Clint T, Knoxville
* Domm, Sheldon Edward, Knoxville
Dorsey, Larry, Knoxville
Dougherty Jr, John H, Knoxville
Dougherty, Robert Edward, Knoxville
Dover, Norris L, Knoxville
* Downs, James E, Knoxville
Drinnon, Jeffrey W, Knoxville
* Duncan Jr, Raphael H, Knoxville
* Duncan, Orville Jack, Fountain Hills, AZ
Dyer, Michael L, Oak Ridge
* Earnest Jr, Charles R, Knoxville
Earnhardt, J William, Knoxville
Ebenezer, Albert C S, Knoxville
Eberle, Andrea J, Knoxville
Eberts, Thomas, Knoxville
Edmunds, Kathleen O, Knoxville
Edmunds, Meade C, Knoxville
Eilerman, Michael S, Knoxville
Eisenstadt, Michael L, Knoxville
Eklins, Sandra K, Knoxville
Elam, Curtis Jay, Knoxville
Elder, Robert F, Knoxville
Ellenburg, Donald T, Knoxville
Elliott, Michael B, Knoxville
Ellis, Roy C, Harrogate
Embry, Jerry J, Knoxville
Enderson, Blaine L, Knoxville
England, W David, Knoxville
Erickson, Richard James, Knoxville
Evancho, Andrew M, Knoxville
Fardon, David Favreau, Knoxville
Fariss, Bruce L, Knoxville
Farris, Richard Kent, Knoxville
Feaster, Samuel H, Knoxville
* Fecher, Mark P, Knoxville
Feld, Neil, Knoxville
Ferguson, James V, Knoxville
Filchock, Joanne, Knoxville
Fillmore, George Edward, Knoxville
Finelli, Robert Edward, Knoxville
* Finer, George H, Sarasota, FL
Fogle, Richard Allen, Knoxville
Foster, Jerry M, Knoxville
Foster, William Edwin, Knoxville
Frame, Barry D, Knoxville
Frame, Scott B, Knoxville
Franklin, Stephen R, Knoxville
Freeman, Coy, Knoxville
Frieder, Barry Wayne, Knoxville
Froula, Paul Douglas, Knoxville
Fry Jr, Mellon Alma, Knoxville
Gagliardi, Marty P, Knoxville
Gaines, Thomas E, Knoxville
Gammeltoft, Karsten, Knoxville
Garber, Brian H, Knoxville
* Garcia Jr, Joseph Isabel, Knoxville
* Gardner, William Henry, Knoxville
Garrett Jr, Albert S, Oak Ridge
Gaylord, Mark S, Knoxville
* Gee Jr, George Leonard, Knoxville
Gentry, Robert Homer, Knoxville
Gerkin, David George, Knoxville
Ghori, Abdul H Khan, Knoxville
* Gilberson, Robert B, Knoxville
Gillespie, Richard Allen, Knoxville
Gitschlag, Gary N, Knoxville
Glatt, Herbert J, Knoxville
Gleaves Jr, James E, Knoxville
Glover, A Michael, Knoxville
Godwin, Charles Wayne, Knoxville
Goldman, Mitchell H, Knoxville
Googe Jr, Joseph M, Knoxville

Googe, Paul B, Knoxville
* Goudelock, D Stevenson, Louisville
Gouffon, Charles Allen, Knoxville
Gould, Howard R, Knoxville
Graham, Randal O, Knoxville
Graves, Joe A, Knoxville
Gray, Frank Benton, Knoxville
Green, Daniel M, Knoxville
Green, Linda, Knoxville
Greene, James Allen, Knoxville
Greenwood, Jeffery D, Maryville
Griffith, Robert Carl, Knoxville
Grossman, Allan M, Knoxville
Gwin Jr, John Leonard, Knoxville
Gyurik, Catherine E, Knoxville
* Haase Jr, Theodore F, Knoxville
Hahn, Jan T, Lenoir City
Hall, Don J, Knoxville
Hall, Robert Edmund, Knoxville
Hall, Stephanie, Knoxville
Hall, William C, Knoxville
Hampton, Bert Allan, Knoxville
Hanna, Wahid T, Knoxville
Haq, Jamshed U, Knoxville
Harb, Joseph W, Knoxville
Hargrove, R Leslie, Knoxville
Harp, Daryl L, Knoxville
Harris Jr, David J, Knoxville
Harris, Christopher D, Knoxville
Harris, Dennis G, Knoxville
* Harris, Robert Wayne, Knoxville
Harrison, John E B, Knoxville
* Harrison, William Blair, Loudon
Hartline, Randal G, Knoxville
Harville, Lacy Edward, Knoxville
Hassell, David F, Knoxville
Hatcher, Paul A, Knoxville
Hauge, David H, Knoxville
Hayworth, Ray Milton, Knoxville
Hecht, Jeffrey S, Knoxville
Heiser, Don Richard, Knoxville
Helsel, Robert A, Knoxville
Hembree, Douglas Kirby, Knoxville
Hemphill, James Louis, Knoxville
Hendrick, Sophia J, Knoxville
Henry, Bertram Rowe, Knoxville
Henschen, Bruce L, Knoxville
Hetrick, Thomas Henry, Knoxville
Hicks Jr, Howard Kenneth, Knoxville
* Hicks, Howard Kenneth, Knoxville
Higgins, Thomas G, Knoxville
Hightower, Michael D, Knoxville
Hill, Hubert Cawood, Knoxville
Hitch Jr, James Parks, Knoxville
Hoadley, Stephen D, Knoxville
* Hobart Jr, Richard Loren, Powell
Hodge, Frederick William, Knoxville
Hodges, Patrick James, Knoxville
* Hoey, David Francis, Knoxville
Holland, Douglas Edward, Knoxville
Holmes, William S, Knoxville
Holt, E Michael, Knoxville
Hookman, Lawrence D, Knoxville
Horton, W Don, Knoxville
Hoskins, John C, Knoxville
Hovis, William Marvin, Knoxville
* Howard Jr, G Turner, Knoxville
Howe, John W, Knoxville
Huang, Po C, Knoxville
Hubbard, Elizabeth W, Knoxville
Hubner, Karl Franz, Knoxville
Huddleston, Charles Irving, Knoxville
Hudgens Jr, James F, Knoxville
Hudson Jr, Arnold R, Knoxville
Hunter, Karen, Knoxville
Hurst, Fred Alan, Knoxville
Huskey, Larry Cecil, Knoxville
Hutchins, Stephen F, Knoxville
Hutson, Charles Combs, Knoxville
Hyatt, Hugh Crockett, Knoxville
Hyde, Gilbert L, Knoxville
* Idol, Enoch Colvin, Knoxville
Ivens, Mark Young, Knoxville
Ivy, Robert E, Knoxville
Jackson, Robert C, Knoxville
Jeffries, Glenn Edward, Knoxville
* Jenkins, Astor L, Knoxville
Jennings, Jeffory G, Knoxville
Jensen, Richard A, Knoxville
Jobson, Kenneth O, Knoxville
Johnson Jr, J Breese, Knoxville
Johnson Jr, William Reeves, Knoxville
Johnson, Clifford, Knoxville
Johnson, Jerry Richard, Knoxville
Johnson, William L, Knoxville
Johnson Sr, Joe Breese, Knoxville
* Jones, Francis S, Knoxville
Jones, Michael E, Knoxville
Jost, Richard Raymond, Spring City
Jourdan, Paul Leon, Knoxville
* Joyce, Margaret Elizabeth, Ocean Springs, MS
Julius, Clark Eldon, Knoxville
Kabbani, Sam A, Knoxville
Kaserman, Fred B, Knoxville
Kattine, Albert A, Knoxville
Kattine, Anthony Albert, Knoxville
* Kennedy, A Glenn, Knoxville
* Kennedy, John Olney, Knoxville
Kennedy, Michael B, Knoxville
Kerns, Ross E, Knoxville
Kesterson, Gregg H D, Knoxville
* Kesterson, John E, Knoxville
Khairollahi, Vali, Knoxville
Killeffer, Fred Ayres, Knoxville
Kincaid, Geoffrey C, Knoxville
King, Irvin Ray, Knoxville
King, Jack Donald, Knoxville
King, Jeffrey T, Knoxville
Kiriluk, Randy M, Seymour
* Klein Jr, Victor Hill, Knoxville
Klein, Carl John, Knoxville
Klein, Frederick A, Knoxville
Kliefoth III, A Bernhard, Knoxville
Knowling, Robert Edward, Knoxville
Koefoot Jr, R Bruce, Knoxville
Koenig, Thomas M, Knoxville
Kozlowski, Kamilia F, Knoxville
Krisle III, George Menees, Knoxville
Kropilak, Michael D, Knoxville
Kubota, Thomas T, Knoxville
Lacey III, John W, Knoxville
Laing, William Gavin, Knoxville
Latham, Kent Emerson, Rockwood
Law Jr, William M, Knoxville
Law, John L, Knoxville
* Law Sr, William M, Knoxville
Lazarus, Stephen M, Knoxville
LeBel, Serge, Knoxville
LeTard, Francis X, Knoxville
Leahy, Michael Douglas, Knoxville
Lee, J David, Knoxville
Lee, Patricia W, Knoxville
Lee, William L, Friendsville
Leisy, Marilyn A, Knoxville
Leonard, Joe H, Knoxville
Lester, Thomas Edward, Knoxville
Lethco, Gary W, Knoxville
Lett, James C, Knoxville
Lewis, Gloria L, Knoxville
Lighter, Donald E, Knoxville
* Lincoln, Thomas A, Knoxville
Lindsay, William C, Knoxville
* Line, Felix Glen, Knoxville
Littlefield, Thomas R, Knoxville
* London, Frank, Knoxville
Lorch, Vichien, Knoxville
Lowry, Randolph M, Knoxville
Lozzio, Carmen Bertucci, Knoxville
Lubas, Janet, Knoxville
Luna, Joe Louis, Knoxville
Luttrell, Arvell Stanley, Knoxville
Lyon, Anthony G, Knoxville
Mack Jr, John W, Knoxville
Maddox Jr, John R, Knoxville
Madigan, Robert Regis, Knoxville
Maggart, Michael L, Knoxville
Maguire Jr, J Kimbro, Knoxville
Mancebo, Gerald L, Knoxville
Manning, Richard O, Knoxville
Marcy, John Samuel, Knoxville
Mardini, Antoin, Knoxville
Martin, Robert O, Knoxville
Martyn, Robert Peter, Knoxville
Massingale, H Lynn, Knoxville
Masters, Steven Bradley, Knoxville
Mathews, Carl Leslie, Knoxville
Mathien, Gregory Mark, Knoxville
Maves, Barry V, Knoxville
* Maynard, Margaret Agnes, Atlanta, GA
McCachren, Samuel Spence, Knoxville
McCallen, Perry Boies, Knoxville
* McCammon, Curtis P, Knoxville
McCauley Jr, Lowell L, Knoxville
McCloud, Michael K, Durham, NC
McCollum, Lionel D, Knoxville
McCormack, Greg W, Knoxville
McCoy, Kyle W, Knoxville
McDaniel, D Lee, Knoxville
McElligott, John, Knoxville
McGhee, William Edward, Knoxville
McGinn, Larry Dean, Knoxville
McGinnis, Carroll William, Knoxville
McKenzie, Donald Keith, Knoxville
McKenzie, Jerome F, Knoxville
* McKinney, Marion Berry, Knoxville
McKissick, William R, Knoxville
McLees, Steven A, Knoxville
McMurry, John P, Knoxville
McPeake III, William T, Knoxville
Meadows, Robert Walter, Knoxville
Meisenheimer, Stephen L, Knoxville
Meric III, Albert Louis, Knoxville
Meric, Janel L, Knoxville
Meyers, Anthony L, Knoxville
Miale, Thomas D, Sweden,
Michaelson, Barry I, Knoxville
Miller Jr, Carter F, Knoxville
Miller Jr, James H, Knoxville
Miller, Christopher A, Knoxville
Miller, Michael M, Knoxville
Miller, Thomas R, Knoxville
Miller, William Obed, Knoxville
Millwood, Roger H, Maryville
Minardo, Joseph D, Knoxville
Minteer, William J, Knoxville
Misra, Sarada N, Knoxville
Mitchell, Donald Eugene, Lenoir City
Mitchell, Michael E, Knoxville
* Mitchell Sr, Foy B, Knoxville
Mixon, William R, Knoxville
Moffett, Steven R, Knoxville
Montgomery Jr, John Lee, Knoxville
Montgomery, Joseph Tucker, Knoxville
Montgomery, Robert N, Knoxville
Moon, Joseph Benjamine, Knoxville
Moore Jr, John David, Knoxville
Moore Jr, Merrill Dennis, Knoxville
Moore Sr, Robert Saylor, Knoxville
Mooreside, Douglas Edward, Knoxville
Moreno, Francisco G, Knoxville
Morgan, Tommy E, Knoxville
* Morgan, Travis Eugene, Knoxville
Morris, Steve A, Knoxville
Morris, Steven Allen, Knoxville
Morton, Anthony W, Knoxville
* Moseley, James E, Knoxville
Mounger, Emerson Jay, Knoxville
Mueller, Robert Louis, Knoxville
Mumford, Mark S, Knoxville
Murchison Jr, John Franklin, Knoxville
Murray Jr, Edward Lee, Knoxville
Muse Jr, William Scott, Knoxville
* Muse Sr, William S, Knoxville
Myers, James David, Knoxville
Natelson, Stephen Ellis, Knoxville
Naylor, Paul T, Knoxville
Neal, Richard Charles, Knoxville
Neff, John C, Knoxville
Nelson Jr, Henry S, Knoxville
Nelson Jr, John R, Knoxville
* Nelson Jr, William Alexander, Knoxville
* Nelson, Bill M, Knoxville
Nelson, Mark L, Knoxville
Newton, Kristy L, Knoxville
Nguyen, Donald H, Knoxville
Nicely, Eric, Knoxville
Nichols, Dale Ellen, Knoxville
Nickels, David A, Knoxville
Norwood, Christopher W, Knoxville
* Noxon, Elvin B, Knoxville
Noxon, Jean K, Knoxville
O'Brien, Patrick, Knoxville
O'Connor Jr, Charles M, Knoxville
O'Kelley, Kenneth R, Knoxville
Obenour, Richard A, Knoxville
* Ogden, Harry K, Knoxville
Ojeda, Gabriel, Knoxville
Otis, Michael Vaughn, Knoxville
Overholt, Bergein F, Knoxville
Overholt, Robert Marion, Knoxville
Owen, J David, Knoxville
* Ozdil, Turan, Knoxville
Pack, Ronald Lynn, Knoxville
Page, Casey Jay, Knoxville
Paine Jr, Raymond Lee, Knoxville
Palatinus, Joseph, Oak Ridge
Panella, Timothy J, Knoxville
Pannocchia, Luis C, New Tazewell
Park, Soung-Ho, Knoxville
Parsons, Rick E, Knoxville
* Parsons, Roy B, Kodak
Passarello, Michael J, Knoxville
Patil, Vijaya R, Knoxville
* Patterson Jr, Reese W, Knoxville
* Patterson Jr, Robert F, Knoxville
Patterson, Frances K, Knoxville
Patteson, Stephen K, Knoxville
Paulsen, William Allen, Knoxville
* Peagler, Charles Gerald, Knoxville
Peebles, Fred Neal, Knoxville
Peeden, Joseph N, Knoxville
Peeden, Paula Z, Knoxville
Peeler, Molly M, Knoxville
Perry, Ronald Howard, Knoxville
Pharaoh, James D, Knoxville
Phelps Jr, Preston V, Knoxville
Phelps, Richard W, Knoxville
Phillips, Michael D, Knoxville
Pickett, James C, Alcoa
Pienkowski, Marek M, Knoxville
* Pierce, Ira S, Knoxville
Pierce, Truett H, Sneedville
Place, James G, Knoxville
Pliagas, George A, Knoxville
Ponder, Robert D, Knoxville
Pool, Michael L, Knoxville
Porter, F Raymond, Knoxville
Powers, Laura B, Knoxville
* Powers, Wilson Watkins, Knoxville
Presswood, James J, Knoxville
* Pride, H Hammond, Knoxville
Prince Jr, John Martin, Knoxville
Prince, Mark D, Knoxville
Prinz, Stephen C, Knoxville
Pritcher, G Mark, Knoxville
* Prose, James Clinton, Knoxville
Purvis, John T, Knoxville
Quilty, Charles L, Louisville
Rader, Gregg M, Knoxville
Rader, Karen T, Knoxville
Ragland, Joel B, Knoxville
Ramos, Antonio L, Knoxville
* Range, John A, Knoxville
Rankin, David M, Knoxville
Raulston Jr, Kenneth L, Knoxville
* Rawson, Freeman L, Seymour
Reath, David B, Knoxville
Reed, Steven W, Knoxville
Reese, Kenneth C, Knoxville
Regester Jr, Rolland F, Knoxville
Reid, William Stuart, Knoxville
Reynolds, Charles W, Knoxville
Rice, Todd M, Knoxville
* Richards, Paul D, Knoxville
Rimer, Ronald Lee, Knoxville
Rist, Toivo E, Knoxville
Roberts, Jeffrey R, Knoxville
Robertson, John Burr, Knoxville
Robinson III, William Bruce, Knoxville
Robinson, Richard Walter, Knoxville
Rochester, John Crawford, Knoxville
Rodgers Jr, John C, Knoxville
* Rogers, Jerry Ray, Norfolk, VA
Rogers, Warren S, Knoxville
* Rogers, William Klar, Knoxville
Rose III, Richard C, Knoxville
Rosenbloom, Scott A, Knoxville
Rotondo, Russell E, Knoxville
Roussis, Perry, Knoxville
Rowe, Buford E, Knoxville
Rowe, Cecil Darrell, Knoxville
Rudolph, Burton M, Knoxville
Rueff, David Anthony, Knoxville
* Rule III, William, Knoxville

Rule, Jack Andrew, Knoxville
Rule, Kenneth Andrew, Knoxville
* Rule, Kenneth Boyd, Knoxville
Russell, Robert Claude, Knoxville
Russell, Stephen A, Knoxville
* Rutherford, Kyle Otis, Knoxville
Rylands, John Craig, Knoxville
Sain, Robert Lynn, Knoxville
Sandberg, Ronald Kenneth, Knoxville
Sanders, Jerry E, Knoxville
Sanders, Steven Allen, Knoxville
Scariano Jr, Jack E, Knoxville
Schaumburg, Edwin W, Knoxville
Schneider, William James, Knoxville
Schriver, Elise E, Knoxville
Schwarz, Susan M, Knoxville
Scott, John Christopher, Knoxville
Scuchmann, George F, Knoxville
Seals, James L, Knoxville
Seals, Roy Lee, Knoxville
Seaton, Douglas Y, Knoxville
* Segars, James Hugh, Knoxville
Semmer, John R, Knoxville
Serrell, Paul Burt, Knoxville
Sevilla, Evelyn A, Knoxville
* Sexton Jr, Richard Carr, Knoxville
Sexton, David G, Knoxville
* Shea Jr, Walter C, Lenoir City
Shepherd, T Preston, Knoxville
Sherrill, S Beth, Knoxville
Shupp, David L, Knoxville
Siddiqi, Naseemul Haq, Knoxville
* Sienknecht, E Charles, Knoxville
Silver, H Steven, Knoxville
Simmons, John D, Knoxville
Simons, Jon Ruric, Knoxville
Sirlin, Scott, Knoxville
Sizemore, Kenny R, Knoxville
Slawsky, Lewis D, Knoxville
Sledge, J Walter, Knoxville
Slutzker, A David, Knoxville
Slutzker, Daniel M, Knoxville
* Smeltzer, Charles C, Knoxville
Smith Jr, George Walton, Knoxville
Smith Jr, Robert Deaton, Knoxville
Smith, Bruce A, Knoxville
Smith, D Preston, Knoxville
* Smith, Eugene Baxter, Knoxville
Smith, Joe S, Knoxville
Smith, Louis A, Knoxville
Smith, Michael G, Knoxville
Smith, Richard S, Knoxville
Smith, Robert Lloyd, Knoxville
Smith, Steven B, Knoxville
* Smith, William N, New Tazewell
Solla, Julio A, Knoxville
Solomon, Alan, Knoxville
Soss, Sheldon Barry, Knoxville
Sowell, Jonathan W, Knoxville
Spiegelman, Gary A, Knoxville
Springer, Michael A, Knoxville
Staley Jr, John R, Knoxville
Stallworth, William Park, Knoxville
Stancher, John A, Knoxville
Stanley Jr, Lowell D, Knoxville
Stauber, Christian Lee, Knoxville
* Stiles Jr, James H, Knoxville
* Stockman, John Milton, Knoxville
Stockton, M David, Knoxville
Sullivan Jr, Thomas Alan, Knoxville
Sullivan, William Ross, Knoxville
Sundahl, C Gerald, Knoxville
* Tarwater, Jean Cate, Knoxville
Tatum, Robert K, Knoxville
* Tauxe, Edward L, Knoxville
Taylor, James Walter, Knoxville
Taylor, Kenneth M, Knoxville
* Teague, Dale Alexander, Knoxville
Terry, William F, Knoxville
Thomas, T Darrell, Knoxville
* Tipton, William Marshall, Knoxville
Tompkins, Forrest G, Knoxville
Toney III, Lee E, Knoxville
Towne, Randall D, Knoxville
Toyohara, Hiroshi, Knoxville
Traylor, Thomas Reid, Knoxville
Trent, Billy Carl, Knoxville
* Trent, Lucian Williams, Knoxville
Trudell, Randall G, Knoxville
Turner, Dean Montgomery, Knoxville
Tyler Jr, William Alexander, Knoxville
Underwood, Michael D, Knoxville
Uri, Margaret, Knoxville
Vandergriff, William Lowell, Knoxville
Vekasi, William Howard, Knoxville
Velasco, Claude R, Knoxville
Vick, George W, Knoxville
Vickers Jr, Marvin Haber, Knoxville
Vinsant, Christopher L, Knoxville
Wade Jr, Dwight Robert, Knoxville
Wakefield, Paul H, Knoxville
Walker, Bruce Edwin, Knoxville
Wall, James Wheland, Knoxville
* Wallace, Sidney L, Knoxville
Waller, David H, Knoxville
Wallis, Donald Edwin, Knoxville
Walters, William J, Knoxville
* Walton Jr, Clifford L, Knoxville
Walton, Norman C, Knoxville
Ware, Robert Edwin, Knoxville
Warrick, Jay H, Knoxville
Watson, David Theodore, Knoxville
Watts, Glenn Ferrell, Knoxville
Webber, George Robert, Knoxville
Weissfeld, Steven C, Knoxville
Wender, Charles M, Knoxville
* Whanger, Herbert Noel, Knoxville
Wheatley, Donald, Knoxville
White III, P Merrill, Knoxville
White, Robert F, Knoxville
Whitehurst, James H, Knoxville
* Whittington, John William, Knoxville
Whittle, Robert Bruce, Knoxville
Wilhoite, Scott L, Knoxville
Williams Jr, Charles H, Knoxville
Williams, Lane P, Knoxville
* Williams, Muriel Lester, Knoxville
Williams, Richard E, Knoxville
Williford, William N, Knoxville
* Willingham, Richard B, Louisville
Wilson Jr, Stephen G, Knoxville
Wilson, David D, Knoxville
Wilson, Robin Terrell, Knoxville
* Winebrenner, John Daniel, Knoxville
Winn, Donna Marie, Knoxville
Wittke, Paul Edward, Knoxville
Wohlwend, Charles David, Knoxville
Wolfe, J Frederick, Knoxville
Wood, George H, Knoxville
Wooten, B David, Knoxville
Wooten, Paul T, Knoxville
* Worden, James P, Knoxville
Wortham, Dale C, Knoxville
Worthington, W Hall, Knoxville
Wright, Glenn E, Knoxville
Wunderlich, Caryn C, Knoxville
Yates, James Douglas, Knoxville
Yatteau, Ronald Francis, Knoxville
Youmans, William Tinsley, Knoxville
Young, Thomas L, Knoxville
* Young, Vernon Hutton, Knoxville
* Young, Vincent T, Concord
* Zachary, Eugene G, Knoxville
* Zirkle Jr, George Andrew, Knoxville
* Zirkle, Charles Rankin, Knoxville
Zirkle, Peter Kevin, Knoxville

LAKEWAY MEDICAL SOCIETY

* Alexander, William King, Morristown
* Allen, Erman Dale, White Pine
Amador Jr, Josephe Garcia, Morristown
Anderson, C Cole, Morristown
Andrews, Douglas Eugene, Morristown
Ballard, Peter Francis, Morristown
Barclay, Lee Roy, Morristown
Barham, James E, Talbott
Blake, Cleland Conway, Morristown
Booker, Burt L, Morristown
* Brock, Howard Thomas, Morristown
* Bryan, Leander C, Rutledge
* Bukeavich, Alfred Peter, Morristown
Bukovitz, Mary Elizabeth, Morristown
Carver, Michael C, Morristown
* Cawood, David Clayton, Jefferson City
* Chung, Sung Jang, Morristown
Clark, Peter, Morristown
Darby, Dewayne P, Jefferson City
Ellis Jr, John W, Jefferson City
Ellis, Frank S, Morristown
Fetzer Jr, John Woodrow, Jefferson City
Fulk, Charles S, Morristown
Greene Jr, David Louis, Morristown
Gronewald, William Robert, Morristown
Gutch III, William John, Morristown
Harris Jr, William B, Morristown
Helms, Crampton Harris, Morristown
Hill, Tenny Jacob, Rutledge
Horner III, John C, Morristown
* Howard, Jessie Eugene, New Market
Hunt, Robert M, Morristown
Jamison, R Alan, Morristown
Kim, Joo-Taek, Morristown
Kinser, John H, Morristown
Lane, Robert A, Morristown
Lindsey, Charles Hugh, Morristown
Lish, Kelly LaGrand, Morristown
Little Jr, Frank B, Morristown
Lowry III, Orlanda Raymond, Morristown
McKnight, Russell Delbert, Morristown
McLemore, Wayne L, Morristown
McNeil, David Wyatt, Morristown
Merritt, O L, Dandridge
* Muncy, Estle Pershing, Jefferson City
Payne, Steven D, Morristown
Perez, Ivan, Morristown
Perry, Patricia, Morristown
Reed, Paul Emory, Sneedville
Renner Jr, Omer Clyde, Morristown
Sams, Josephiah B, Morristown
* Scott, Charles Seale, Morristown
Tindall, J Raymond, Morristown
Toffoletto, Larry M, Morristown
* Trusler, Powell Maden, Morristown
Wee Eng, Josephe L, Morristown
Willbanks, David Verner, Morristown
Yacono, John V, Houston, TX
Yates, Raymond Bernard, Morristown
Zirkle, John W, Jefferson City

LAWRENCE COUNTY MEDICAL SOCIETY

Berry, Frances A, Lawrenceburg
Boyd, Michael Alan, Lawrenceburg
Combs, William Arnold, Lawrenceburg
Crowder Jr, Virgil Holt, Lawrenceburg
* Davidson, Boyd P, Lawrenceburg
Dobias, Matthew Charles, Lawrenceburg
Everett, Leon E, Lawrenceburg
Hamilton III, Llewellyn Holloway, Lawrenceburg
Henderson, Norman Leroy, Lawrenceburg
Hudgins, J Carmack, Lawrenceburg
Khatri, Haresh H, Lawrenceburg
Manguhat, Jaime Virata, Waynesboro
Mauricio, Lilia D, Lawrenceburg
Mediate, Penny Smith, Lawrenceburg
Methvin, Ray Elwin, Loretto
* Parrish, Villard, Lawrenceburg
Qualls, Jerry Franklin, Lawrenceburg
Shah, Jayraj C, Lawrenceburg
Shah, Navin P, Lawrenceburg
Staley, Homer Lee, Lawrenceburg
Sutherland, W Shaen, Lawrenceburg
* Taylor, Carson E, Lawrenceburg
Thomas, Henry Lewis, Lawrenceburg
Turman, Alfred, Lawrenceburg
Wheelhouse, Walter W, Lawrenceburg
Wilson, Clayton Don, Lawrenceburg

LINCOLN COUNTY MEDICAL SOCIETY

Barnes, Larry W, Fayetteville
Cobb, Rudy Theodore, Fayetteville
Gowda, H R Mallappa, Fayetteville
Jeffres, Earl M, Fayetteville
Jones, William R, Fayetteville
McCauley, David R, Fayetteville
Morrison, Theresa, Fayetteville
Norman, Warren T, Fayetteville
Norskov, William Richard, Fayetteville
Patel, Yashwant P, Fayetteville
* Patrick Jr, Thomas Alex, Fayetteville
Ralston Jr, Fred, Fayetteville
Spears, William Kyle, Fayetteville
* Toone, C Doyne, Myrtle Beach, SC
Westover, Robert A, Fayetteville
Young Jr, Richard Wilson, Fayetteville
* Young, William McKinney, Fayetteville

MACON COUNTY MEDICAL SOCIETY

* Deck Jr, Marvin Edward, Lafayette

MARSHALL COUNTY MEDICAL SOCIETY

Alfredson, David G, Belfast
Bone, George, Lewisburg
Hays, Danny, Columbia
* Leonard, John Clarence, Lewisburg
Lewis, Melvin Glenn, Lewisburg
Nash, Timothy A, Lewisburg
Phelps Jr, Kenneth J, Lewisburg
* Phelps Sr, Kenneth J, Lewisburg
* Rutledge, Jones Flanagan, Lewisburg
Surber, Jerry Lee, Brentwood
VonAlmen, Joseph Franklin, Lewisburg
* Wolcott, Eugene S, Franklin
Wolf, Gary Joel, Lewisburg

MAURY COUNTY MEDICAL SOCIETY

Adams, Jeffrey Thomas, Columbia
Andrews, Claudia S, Columbia
Atnip, Charles D, Columbia
Bain, Robert A, Mount Pleasant
Ball, Charles A, Mount Pleasant
Barr, Ralph I, Columbia
Broadway, Carol, Columbia
Brown, Jerry M, Columbia
Brown, John P W, Columbia
Causey Jr, P Thomas, Columbia
Choksi, Amit A, Columbia
Clifford Jr, Rufus R, Columbia
* Cooper, Earnest H, Chattanooga
Dake, Thomas Scott, Columbia
Daniel, Eslick Ewing, Columbia
Daniels, David Allen, Columbia
Davidson, Randall L, Columbia
Davis, Karen Fisher, Columbia
Davis, Patricia Clifford, Columbia
Denney, Thomas Wade, Columbia
Dirr, L Y, Columbia
Duncan, Thomas Ray, Columbia
Ferrell, Harold Wiley, Columbia
Fiedler Jr, George Adolph, Columbia
* Gardner Jr, Carl C, Columbia
Gardner, Benny A, Columbia
Gateley, Laura Turney, Franklin
Gordon, Timothy Edward, Columbia
Gray, Susan Thomas, Columbia
Hargrove, Joel T, Columbia
Harmon Jr, Roy F, Columbia
Harris, Gaylon Lee, Columbia
Hartman, Patrick Erwin, Columbia
Heard, George J, Columbia
* Helm, Harry C, Columbia
High, Ben Greer, Columbia
Hunter, Thomas A, Columbia
Jameson III, Chet Houston, Columbia
* Jernigan, William N, Columbia
King, James Claude, Columbia
Kirkpatrick, Jeff C, Columbia
Kustoff, Ralph, Columbia
* Langa, Ambrose M, Columbia
* Lay, Allyn Monroe, Columbia
Maloof III, John A, Columbia
* Mayfield Jr, George Radford, Columbia
McClure, Robert Wallace, Columbia
McKee, Mary S, Columbia
* Miller, Clay R, Columbia
Monroe, Linda P, Columbia
Moore, Kenneth Lynn, Columbia
Muha, Michael J, Columbia
* Nickell, Lawrence R, Columbia
Olson, John Richard, Columbia
Overton, Mary E, Columbia
Owens, Susan Jennings, Columbia
Parey, Stephen Edwin, Columbia
Pearson, Jack Teryle, Columbia
Perryman, Paul Edward, Columbia
Podgorski, Gary Thomas, Columbia
Poling, Rodney A, Columbia
Pulliam, Cary Watson, Columbia

Rayburn Jr, M Taylor, Columbia
Richardson Jr, James W, Columbia
Robinson II, William Allison, Columbia
Simmons, Stephen P, Columbia
Sisk, Andrew Webb, Columbia
Smith, Anthony L, Columbia
Stewart, William R, Columbia
Strickland, Raymond C, Columbia
Stults, Richard, Columbia
Thompson Jr, Robert Guerin, Columbia
Toban, M Moataz, Columbia
Vinson, Billy Joe, Columbia
Vinson, Janice Marie, Columbia
Vire, C Gordon, Columbia
* Ward, Leon S, Columbia
White, Thomas Ray, Columbia
Wiesman, H James, Columbia
Wilburn, Charles D, Columbia
* Wilkes Jr, James Wallace, Columbia
* Williams Jr, John O, Mount Pleasant
* Young Jr, Thomas Kay, Columbia

MCMINN COUNTY MEDICAL SOCIETY

Bledsoe Jr, Robert E, Athens
Bowers, William Richard, Athens
* Boyce, James Reid, Athens
Breeden, Kimberly T, Athens
Burroughs II, Wallace F, Athens
Byrd, David L, Athens
* Carroll, Charles Thomas, Athens
Cox, Charles Boggess, Etowah
* Davis, William Mayfield, Athens
Fliedner, Thomas Sample, Riceville
Foree Jr, William Edwin, Athens
Hargis, Larry Jackson, Athens
Hewgley Jr, Robert G, Athens
* Hewgley, Robert Gardner, Athens
Holliday, H Joseph, Athens
* Jones, Milnor, Athens
Lemings, Stephen, Loudon
Martin, Clyde, Athens
Maynard, Chris L, Athens
McKenzie, John Carl, Athens
Meyer, Charles Thomas, Etowah
Mitchell Jr, Foy B, Athens
Mokal, Albert Joseph, Loudon
* Montgomery Sr, John L, Knoxville
Morris, William Gourrier, Athens
* Powell, Jess A, Athens
Roberts, Rodney Shane, Athens
Schwiger, Paul, Athens
Sharpe, Charles Richard, Athens
Slowey III, James Fergus, Athens
Snider, Iris G, Athens
Soni, Harish Bahulal, Etowah
Soni, Renuka Harish, Etowah
* Trotter, Robert William, Athens
Wallace, Jeffery, Athens
* Whittle Jr, Herbert P, Loudon

MEMPHIS-SHELBY COUNTY MEDICAL SOCIETY

Acker, James David, Memphis
* Ackerman, Robert F, Memphis
Adams Jr, John Robert, Memphis
Adams Jr, William Milton, Memphis
* Adams, John Q, Collierville
* Adams, Lorenzo H, Memphis
Adams, Robert Franklin, Memphis
Adams, Robert L, Memphis
Adcock III, Frank John, Southaven, MS
Addington, Milton Brent, Memphis
* Adkins, Henry Leigh, Germantown
Adwell Jr, Charles Edward, Memphis
Aguillard, Susan Mack, Cordova
* Aivazian, Garabed Hagop, Memphis
Akbik, Mohamad J, Memphis
* Akers, Howard Thomas, Memphis
Akins, Charles D, Memphis
Akins, Steven L, Memphis
Albritton, John Fortune, Memphis
Alexander Jr, Albert M, Memphis
Ali, Zenah Ahmed, Memphis
Alissandratos, Jane K, Memphis
Allbritton, James F, Memphis
Allen Jr, Ray Maxwell, Memphis
* Allen, Chester G, Memphis
Allen, Gisele, Memphis
Allen, Lee, Memphis
* Alley, Franklin H, Somerville
- Allum II, Kenneth, Memphis
Alston, George P, Memphis
Amonette, Rex Allen, Memphis
Anderson, Joe Pat, Memphis
Anderson, Keith, Memphis
Andrews, C Radford, Memphis
- Anfinson, Scott Michael, Memphis
Angel, John Joseph, Memphis
* Anishanslin, Donald N, Collierville
- Anthony, Frank Nathan, Memphis
Apperson, John W, Memphis
Applegate, William Brown, Memphis
- Arehart, David, Memphis
- Argo, David Brent, Memphis
Arkin, Charles Richard, Memphis
Armstrong, John Dale, Memphis
Arnold, John Francis, Memphis
Arnold, Thomas W, Memphis
Arnold, Valerie Kaplan, Memphis
Aronoff, Philip Melvin, Memphis
Arrindell, Esmond Llewellyn, Memphis
Ash, Judy Duxbury, Memphis
* Aste, J Malcolm, Memphis
* Atkins, Leland Langston, Memphis
Atkinson III, Edward, Memphis
Austin, John Lindsay, Memphis
- Avery, Melissa V, Memphis
Awdeh, Mahir Ramiz, Memphis
Aycock Jr, William Wallace, Memphis
Babin, Richard W, Bartlett
- Bailey, Michael, Memphis
Bailey, James Wesley, Memphis
* Baird, John William, Memphis
* Baker, Joseph E, Memphis
Baker, Laurie M, Germantown
* Baker, Malcolm A, Arlington
* Bale, George Franklin, Memphis
Ballenger, Reid Peter L, Memphis
Bang, Hoi Jine, Germantown
Bannister, Lea Mary, Memphis
* Barber, Roy M, Memphis
- Barger, Amy, Memphis
- Barnes, Edward Kirk, Memphis
Barnes, Grover W, Memphis
Baron, Michael John, Memphis
- Baronowski, Robert Paul, Memphis
* Barr, James R, Memphis
- Barrett, Kimberly Gaye, Nashville
Barrett II, Milton R, Bartlett
- Barrick, Kecia Michelle, Nashville
Baskin, Reed Carl, Memphis
Bates, Richard Greene, Memphis
- Baymiller, Scott P, Memphis
Bearden, Carrie Patton, Memphis
Beatus Jr, Benjamin Louis, Memphis
- Beaty, Kenneth Dale, Memphis
Beaty Jr, James Harold, Memphis
- Beaver, AnneCorinne, Memphis
Beaver, Terinell, Memphis
- Beck, Mary, Memphis
- Becker, Stephanie, Chattanooga
Beckford, Neal Stanley, Memphis
* Bellott Jr, Arthur L, Memphis
Bellur, Srinath N, Memphis
- Berman, Robert Joseph, Memphis
- Berry, Timothy Bryan, Denver, CO
Berry III, Allen D, Memphis
Berry, Karen Waldrip, Memphis
Bertorini, Tulio E, Memphis
- Bhakta, Amish, Memphis
Bicknell, Bennett W, Memphis
Bielskis Jr, William M, Memphis
* Biggs, Jack, Memphis
* Biles Jr, James D, Memphis
- Bingham, Van, Memphis
Birdsong Jr, Emmett S, Memphis
- Bishop, Laura, Memphis
Blackett, Melrose Ingle, Memphis
Blackwell, Carolyn Fiser, Memphis
Blair, John Rodney, Memphis
- Blakney, Eric D, Memphis
* Bland Jr, Basil A, Memphis
* Bland, George B, Memphis
* Bleecker, Philip B, Memphis
Blumen, Herbert, Memphis
Blumenfeld, Harry Bernard, Memphis
Blythe III, Joseph Alfred, Memphis
Boals III, Joseph Calloway, Memphis
- Boals Jr, James William, Memphis
Boals, James William, Germantown
Boho, Robert Thompson, Memphis
Boehm, Robert M, Memphis
- Bookout, John Scott, Memphis
Boom, Alan Dexter, Memphis
- Boone, Nannie, Memphis
* Boone, Howard A, Memphis
Boone, James E, Memphis
Boone, Thipzvan, Memphis
Boston, Barry, Memphis
Boswell, Richard Lee, Memphis
* Bouldin, Mary E, Clarksdale, MS
Bourland Jr, Robert Leon, Memphis
Bourland, William Landess, Memphis
- Bowen, Danielle Elizabeth, Memphis
* Bowerman, Earl P, Memphis
Boyd Jr, Allen Street, Memphis
Boyd, Daniel Street, Cordova
* Brady, Boyer M, Memphis
Brady, Michael Batson, Memphis
- Brewer, William, Memphis
Brewer, Raymond Michael, Collierville
- Brewington, Stacy, Memphis
* Bridges, James T, Memphis
- Brightol, Karin, Memphis
- Brinkmann, Kevin, Memphis
Britt, Louis Goodno, Memphis
- Brockette, Shelia, Memphis
Bronstein, Maury W, Memphis
Bronstein, Michael S, Memphis
Brookoff, Daniel, Memphis
- Brooks, Christie Nicole, Memphis
Brooks, Brown, Memphis
Brooks, Maria Teresa, Arlington
- Brown, Chandra, Memphis
- Brown, Shannon C, Memphis
- Brown, Thomas Lloyd, Memphis
Brown, Ann Dail, Germantown
Brown, Charles H, Memphis
* Brown, James S, Memphis
Brunt, Charles Hal, Memphis
* Bryant, James W, Memphis
Buchalter, Robert, Memphis
- Buchanan, Ernest, Memphis
- Buchanan, Mark Gary, Memphis
Buchignani, John Shea, Memphis
Buckley Jr, Madison H, Memphis
Buckley, William Paul, Memphis
Bucy, William Wesson, Germantown
- Bueno, Frances, Memphis
Burch, James Reginald, Memphis
- Burdette, Hillary, Knoxville
Burke, Larry D, Memphis
Burkle III, George Henry, Germantown
- Burnett, Jill, Memphis
Burnett, Charles Roland, Memphis
Burruss, George Lewis, Memphis
Burton, Mark Nathan, Portland, OR
Burton, William Duer, Memphis
Busby, Micky L, Memphis
Butler, Dorothy Ann Hicks, Memphis
Butler, Jonathan William, Memphis
Butler, Richard Mason, Memphis
Buttross, John Boustany, Memphis
* Buxton, Bertram H, Marco Island, FL
Byrd, Kathryn Woods, Memphis
- Cain, Stephanie Smith, Memphis
Calandruccio, James Howard, Southaven, MS
* Calandruccio, Rocco A, Memphis
Caldwell, Edward Prichard, Memphis
- Calendine, Chad Logan, Memphis
- Calfee, Michael David, Hermitage
* Callison, Maston K, Memphis
- Campbell, Kathleen, Memphis
Canale, Dee James, Germantown
Canale, Sturla Terrance, Memphis
Cancio, Consolacion V, Memphis
* Cannon, Bland Wilson, Vero Beach, FL
Cape, Charles Albert, Memphis
* Caradine Jr, Robert Sidney, Memphis
Carbone, Laura D, Memphis
- Carden, Kelly A, Memphis
Carnesale, Peter Guydon, Memphis
- Carpenter, Sharon Denise, Birmingham, AL
Carro, Manuel F, Memphis
Carruth, Paul C, Cordova
* Carruthers Jr, Daniel F, Memphis
Carson, Ricky Reynolds, Memphis
Carter, Lee M, Huntingdon
Carter, Belvia, Memphis
Carter, Charles L, Memphis
Carter, James Roland, Memphis
- Caruso, Janis, Memphis
* Cashion, Ernest L, Germantown
Casini, Michael Peter, Memphis
- Caten, Eric Lee, Memphis
Cattau Jr, Edward Leroy, Memphis
Cawthon, Sarah A, Memphis
- Chaffin, David, Memphis
- Chambers Jr, John Wallace, Brentwood
Chance, Joseph Walker, Cordova
Chapman, Cathy, Cordova
* Chappell, Fenwick W, Memphis
- Charles, Kelli Michelle, Memphis
Charles, Steve, Memphis
Chase, Nancy Ann, Memphis
Chauvin, Edgar Joseph, Memphis
Cheek, Richard Calvin, Memphis
Chesney, Carolyn M, Memphis
Childers, Jennifer W, Memphis
- Childress, David, Memphis
- Chism, Sheryl Chantay, Jackson
Chodoch, James, Memphis
- Choo, Susan, Memphis
Christian, Claiborne A, Southaven, MS
Christopher, Robert Paul, Memphis
Chu, George, Memphis
Chuang, Howard J, Memphis
- Chumley, Cari, Memphis
- Chung, Vincent, Memphis
Clarendon, Colin C D, Memphis
- Clark, Kenneth, Memphis
Clark Jr, Dwight Witt, Memphis
Clarke, Catherine Jane, Memphis
* Clarke, Charles L, Memphis
- Claussen, Peter Valentine, Memphis
- Claybrook, Phillip, Memphis
- Clements, Wilson Monroe, Memphis
Clemons, Mark P, Memphis
Clogston, Charles, Memphis
- Cloud, Mark William, Memphis
* Cocke Jr, Edwin W, Memphis
Cockroft, Robert Lawrence, Germantown
- Cohen, Shannon, Cordova
Cohen, Alan Jay, Memphis
* Cohen, Lawrence Louis, Memphis
Cole Jr, F Hammond, Memphis
* Cole, Francis H, Memphis
- Collier, Michael, Memphis
- Collins, David, Memphis
- Collins, Jason Patrick, Memphis
- Collins, Leslie Susan, Nashville
* Collins, Blaine C, Memphis
* Collins, Frank H, Memphis
Condon, Gregory J, Memphis
- Conrad, Michael James, Memphis
Cook, Stephen Lloyd, Memphis
- Cooper, Steve W, Memphis
Cooper, Charlie Walter, Memphis
- Copeland, John, Memphis
Copeland, George D, Memphis
Cornelius, Leland Raeburn, Germantown
Couch Sr, Charles E, Memphis
- Couden, Michael R, Memphis
Counce, Michael F, Memphis
* Courington, Doris Payne, Memphis
Cowan Jr, George S M, Memphis
Cowles, Stefan Joseph, Memphis
- Cox, Gregory, Memphis
Cox III, Sam J, Memphis
Cox, Clair Edward, Memphis
Cox, Linda Kay, Memphis
- Crabtree II, Harold Park, Columbia
Crabtree, Barry Dewayne, Cordova
- Craig, Laurin A, Memphis
- Craig, Michael Scott, Memphis
Crater, Glenn D, Memphis
* Craven, Rufus Edgar, Memphis
Crawford, John D, Collierville
Crenshaw Jr, Andrew H, Memphis
Crenshaw, Thomas H, Memphis
Creson Jr, Thomas K, Memphis

Crews, John T, Memphis
Crisler Jr, Herman A, Memphis
Crisler, Crista Loretta, Memphis
Croce, Martin A, Memphis
Crockarell, John Reams, Memphis
Crone, Rohert A, Memphis
Croshy, Virgil Glenn, Memphis
- Crouch, William L, Memphis
* Crupie, Joseph E, Memphis
Crupie, Marc Joseph Marcellus, Germantown
Crutcher, Nancy, Memphis
- Cummings, Allison C, Memphis
* Cummins, Alvin Joseph, Memphis
- Cunningham, Stephen Gerrod, Memphis
Cunningham III, Thomas M, Memphis
Cunningham, Dale Preston, Germantown
Cunningham, David Lane, Memphis
Cunningham, Mark Lane, Memphis
Currey, Thomas Arthur, Memphis
Curtis, Karen Louella, Memphis
- Cwik, Chris, Memphis
Dahney, Cynthia A, Memphis
Dang, Luu Huy, Germantown
Daniels Jr, William Ward, Memphis
- Dargie, Tripp, Memphis
- Darling, Jama M, Memphis
Daugherty, David R, Cordova
Davidson III, Orin L, Memphis
Davies, Keith G, Memphis
- Davis, Matthew P, Memphis
Davis Jr, Jesse Theodore, Memphis
Dawoud, Samir Riad, Memphis
- DeBruycker, Timothy M, Memphis
DeFranco, Joseph A, Memphis
* DeMere, McCarthy, Memphis
* DeSaussure Jr, R L, Memphis
DeShazo, Michael Henry, Memphis
- DeVersa, Peter R, Nashville
DeWeese, Melvin Wayne, Memphis
Dean, Patrick Joseph, Memphis
Deaton, William Jerry, Memphis
Dellinger Jr, Hubert L, Memphis
Dempsey, Buckley Kinard, Germantown
Dempsey, Thomas Jackson, Memphis
Deshaies, Roger L, Memphis
Dewane, Joseph C, Memphis
- Dewey, W Chapman, Memphis
Diaz, Claro Faustino, Memphis
Digaetano, Dolores Maria, Cordova
Dilawari, Raza Ali, Memphis
Dirghangi, Jayanta, Memphis
Dirmeyer, Phillip Hays, Memphis
Disney, Jere Michael, Memphis
- Dohrose, Christopher David, Memphis
Dohson, John M, Memphis
- Dohyns, Perry, Memphis
- Dockery, Brian Keith, Memphis
Dodd, Richard W, Memphis
Dohan Jr, Francis Curtis, Memphis
* Dorian, John Bernard, Cordova
Dorroh, Charles William, Memphis
- Doty II, John D, Memphis
Dragutsky, Michael Steven, Memphis
Drake, Arnold Mannas, Memphis
* Drenning, Paul Thomas, Memphis
- Dress, Christopher Michael, Memphis
Drewry Jr, Richard Daniel, Memphis
- Driggers, Rita Wesley, Falls Church, VA
Duherstein, Larry Edwin, Memphis
Duckworth, John Kelly, Neshit, MS
Duckworth, Nancy C H, Memphis
Dugdale, Marion, Memphis
Duggirala, Vijaya L, Memphis
- Duke, Anton L, Collierville
* Duke, Don DeWindle, Memphis
Duke, Rohert Auhrey, Memphis
Dunavant Jr, William David, Memphis
* Dunavant, William David, Memphis
- Dunaway, Peter, Memphis
Dunaway, Dan Alexander, Memphis
Duncan, Jerald Mark, Cordova
Duncan, Scott Furm Mofford, Memphis
Duncan, Thane Edward, Arlington
Duncan-Cody, Barhara A, Memphis
- Dunlap, Chris, Memphis
* Durfey, John Quincy, Panama City, FL
Eason, Hamel Bowen, Memphis
Eastmead, Donald Joseph, Memphis
Economides, Nicholas-John, Memphis
Edelson, Michael L, Memphis
Edmonson, Allen S, Memphis
- Edwards, William A, Cordova
Edwards Jr, Lelon O, Germantown
Edwards, Mark S, Memphis
Edwards, Neil B, Memphis
Efird III, Walter Guy, Memphis
Eggers, Frank M, Memphis
Eggers, Jordan William, Memphis
- Eidson, Timothy, Memphis
- Ellis, Martha Jane, Germantown
- Ellzey, John A, Bartlett
Emerson, Donald Stewart, Memphis
Emmett, John Roy, Memphis
Engelherg, Jerry, Memphis
Ennis, Kenneth A, Memphis
Ennis, Richard Lyn, Memphis
Ensor Jr, James K, Memphis
Entman, Howard, Memphis
* Erickson, Cyrus Conrad, Memphis
Ernst, Thomas Lynn, Memphis
* Etteldorf, James N, Memphis
* Ettman, Irving Kelsey, Memphis
- Evans, John, Memphis
* Everett Jr, Bennett E, Memphis
- Fahian, Matthew Joseph, Memphis
Fahian, Timothy Charles, Memphis
Falvey, William Davis, Memphis
Fancher, Karen, Memphis
Fancher, William H, Memphis
Fanning, David, Memphis
* Faquin, Cornell Charles, Germantown
- Farnsworth, Samuel Eric, Memphis
Farrar, Thomas Crowell, Germantown
* Farrar, Turley, Pelzer, SC
- Farris, Christie E, Memphis
* Farrow Jr, C Creston, Memphis
Feild, James Rodney, Cordova
* Feinstein, Harold, Memphis
Feler, Claudio A, Memphis
Felker, Richard Edwin, Memphis
- Ferguson, Claihorne, Memphis
Ferguson, John Mitchell, Memphis
Ferguson, Rohert, Memphis
Ferrell, Thaddeus Hagan, Memphis
Fesmire, William Murray, Cordova
Fidler Jr, William Jonas, Memphis
- Finch, Max Cortez, Memphis
Fink, Rohert David, Memphis
Finn, Cary Martin, Memphis
- Finney, Patrick, Memphis
Fisher Jr, Joseph N, Memphis
* Fisher, Daniel F, Memphis
Fisher, Rohert Moore, Memphis
Fitch, Sarah, Memphis
Flanagan, William H, Memphis
Flanary, James S, Memphis
Fleming, Irvin Durant, Memphis
Fleming, James Christian, Memphis
Fleming, Julian Glenn, Memphis
Fleming, Richard M, Memphis
Flinn Jr, George Shea, Memphis
Flinn, Carl Edwin, Memphis
- Florendo, Katherine, Memphis
Florendo, Noel Tadiar, Memphis
Flowers, William Parks, Memphis
- Foley, Melanie Renee, Memphis
Foley, Kevin T, Germantown
Folse, Timothy, Memphis
Foner, Max, Memphis
Fortune, James Everett, Memphis
Foster, Michael E, Southaven, MS
Fountain Jr, Francis F, Memphis
Fowler Jr, John W, Memphis
Fowler, Tommy S, Germantown
- Fox, John Rohert, Memphis
- Fox, Lana G, Memphis
Fox, James E, Memphis
Fox, Teresa Otey, Memphis
- France, Jeffery Jay, Memphis
Francis III, Hugh, Memphis
Francis Jr, Hugh, Memphis
Francisco, Jerry Thomas, Memphis
Franklin, Edgar R, Memphis
- Frazier, Jonathan, Memphis
Freeman III, Barney Lynn, Germantown
Freeman, Jerre Minor, Memphis
* French, William E, Germantown
- Frenchman, Meghana, Memphis
Friedman, Harry, Memphis
- Frigon, Vaughn A, Memphis
- Frizzell, Bart, Memphis
- Funderburk, Amy, Memphis
- Fung, Hui-Ning, Memphis
Furr, Philip Marvin, Memphis
* Fuste, Ricardo R, Key Biscayne, FL
Futrell, Thomas Walter, Memphis
Gaher, Ahmed Osama, Memphis
Gaillard, Thaddeus B, Germantown
Gaines, Kenneth J, Memphis
* Galindez, Telmo, Germantown
- Galloway, Andrea, Bowling Green, KY
Galyean, James R, Memphis
Galyon, James Theodore, Memphis
Gammill, Stephen Lane, Memphis
- Gannaway, William, Memphis
- Gannon, Brian S, Franklin
Gant, Linda L, Cordova
- Gardner, J Eric, Memphis
Gardner Jr, Lawrence G, Memphis
Gardner, John Harvey, Memphis
- Garrett, Christopher, Memphis
Garrett Jr, Harvey E, Memphis
- Gaslightwala, Sherehanu, Memphis
Gavant, Morris Leonard, Memphis
* Gay, James R, Lakewood, PA
Gayden, Evelyn Wilkerson, Memphis
Gayden, John O, Memphis
Gehi, Mohan M, Memphis
- Geisler, William M, Memphis
Gelfand, Michael S, Memphis
- Gentry, Jason, Memphis
- Gentry, Shawn N, Memphis
George, David Lewis, Memphis
* George, Lewis Watson, Memphis
Gerald, Barry Elmo, Memphis
- Gernt, Paige Renee, Memphis
Geshke, Terrence Edward, Memphis
Gettelfinger, Thomas C, Memphis
- Getzoff, Andrew, Memphis
- Giaroli, Eddie Lee, Memphis
Giddens, G Aric, Memphis
Giddens, Mary Andrea Cunningham, Memphis
- Gillenwater, David Ray, Church Hill
* Gilluly, John Joseph, Memphis
Gilmore, James C, Memphis
* Ginn, Bohhy H, Memphis
Gipson, Stephen Lavon, Memphis
* Gish, George Edward, Memphis
- Givens, Preston G, Memphis
Givens, James Rohert, Sylvester, GA
- Glenn, Daran Graham, Memphis
Glotzhach, Raymond E, Memphis
- Goff, Sharon Denise, Memphis
Gold, Rohert E, Memphis
Goldin, Melvin Lester, Memphis
Gooch, Jerry Burton, Memphis
Goodman, Jack A, Memphis
Goodman, Ralph C, Memphis
- Goodwin, Brenda, Memphis
Gore, Margaret, Memphis
Gorline, William James, Memphis
Goshorn, Neumon Taylor, Memphis
Gotten Jr, Nicholas, Memphis
* Gotten, Nicholas, Memphis
Gould, John Douglas, Memphis
- Gourley, Korin L, Memphis
* Gourley, Rohert Dunseith, Memphis
* Gragg, G Winston, Memphis
- Grant, Christy Anne, Memphis
Gratz Jr, John Fisher, Memphis
Graves Jr, Lester R, Memphis
- Green, Jeffrey W, Cordova
Green Jr, James Butler, Memphis
Greene Jr, Rohert W, Memphis
Greenwell, Thomas D, Memphis
Greer, Jack Ewell, Memphis
- Griffin, Chad Auhrey, Memphis
Griffin, Daniel Eugene, Memphis
- Griffith, Mack Wilson, Memphis
Grimm, Leander Morel, Southaven, MS
Grise, Jerry Wade, Memphis
Grohmyer III, Alhert Joseph, Memphis
* Grohmyer Jr, Albert Joseph, Memphis
Grogan Jr, Fred T, Cordova
Grossman, Ronald K, Cordova
Guhin, Steven Sydney, Memphis
Guinter, Rohert H, Collierville
Guyton, James L, Memphis
Hackman, Bela Bernat, Memphis
* Haimsohn, James S, Memphis
Halford III, Hollis H, Millington
Halford, Jack Richard, Bartlett
- Hall, Denver Ray, Memphis
Hall, Johnnie Cameron, Germantown
* Hall, Sylvia A, Memphis
* Halle, Margaret J A, Memphis
Hamby, Donald Lynn, Memphis
Hamilton III, Fred H, Memphis
* Hamilton, Emily Thomas, Memphis
Hamilton, Ralph F, Memphis
Hamilton, Ralph S, Memphis
Hamlett III, James M, Memphis
Hammond, Mark L, Memphis
* Hamsher, John B, Memphis
Handorf, Charles Russell, Memphis
- Hankley, Daniel, Memphis
- Harders, Gregory P, Memphis
Hardin, William G, Memphis
Harkess, James W, Germantown
- Harper, Melinda C, Memphis
Harriman, Mark S, Memphis
Harrington, Oscar B, Memphis
Harris, Buford Terrell, Memphis
Harris, John Joel, Memphis
- Hartman, Bert Allen, Memphis
Hartman, Laura Jan, Memphis
Hasen Jr, Howard B, Memphis
* Hasen, Howard B, Memphis
- Haskins III, Thomas G, Cordova
Hatch Jr, Fred E, Memphis
- Hatfield, Britt, Memphis
- Hausmann, James Stanford, Memphis
* Hawkes, C Douglas, Marco Island, FL
* Hawkes, Jean Murray, Marco Island, FL
* Hay, Cyril Leon, Memphis
Hayes III, Wayland J, Collierville
Hayes, William Timothy, Memphis
Haykal, Radwan F, Memphis
- Hays Jr, Edwin Carlton, Memphis
Hays, Rachael Ann, Memphis
Headley, Arthur Stacey, Memphis
- Heffington, Stephen Hardeman, Memphis
Hellman, Michael D, Memphis
- Helmhout, Shaun L, Memphis
Henard, Donald Claude, Memphis
* Hendrix Jr, James H, Memphis
Henley III, Russell G, Memphis
Herndon Jr, Bruce Wayne, Memphis
- Herring, Paula Ann, Cordova
- Herrington III, Clarence G, Memphis
- Hethmon, Carol-Lynn B, Memphis
- Heverly, Skip, Memphis
Hickerson, William L, Memphis
- Hickey, Gabriel Younghlood, Memphis
Hickey Jr, Homer David, Memphis
Higdon, Dennis Alan, Memphis
* Hill, Fontaine S, Memphis
Hill, John Roy, Memphis
Hill, Paul Bryan, Memphis
Hilsenbeck Jr, John Rohert, Memphis
Himmelstein, Stevan, Memphis
Hines III, Elhert E, Memphis
Hines, Leonard Harvey, Memphis
Hixson, Sherman D, Memphis
Hodges, John McIver, Memphis
- Hoffman, Paul Erich, Cleveland
* Hoffman Jr, Walter K, Memphis
Holcomb, Randall L, Memphis
Hollahaugh, Rohert Sterling, Memphis
Holland, Nancy Elizaheth, Memphis
Hollis, David Olyn, Germantown
Holloway Jr, David Hoyt, Memphis
- Holmes, John, Memphis
* Holmes, James Elmore, Memphis
Holt Jr, Huey Thomas, Memphis
Hood, Roy L, Cordova
Hood, Stephen Thomas, Memphis
Hopkins, Jack T, Memphis
* Horne, Arthur E, Memphis
* Horton, Glenn Edward, Cordova
* Hotchkiss, Huhert Leech, Brentwood
* Housholder, Charles H, Memphis
* Houston, John L, Memphis
Howser, John Patton, Memphis

- Huang, Alvin, Memphis
- Hubbard, Jason R, Memphis
Hubbard, Ronald Eugene, Memphis
- Huber, Amy Amonette, Memphis
- Huber, John Dominic, Memphis
- Hudson, Clay B, Memphis
Hudson, Joseph S, Memphis
Huffman, John David, Memphis
- Huggins, Shanon Kim, Cordova
Hughes, Christopher B, Cordova
- Hughes, Diane, Memphis
* Hughes Jr, Felix A, Memphis
Hughes, Allen Holt, Memphis
* Hughes, James Gilliam, Memphis
* Hughes, John Davis, Germantown
Hughey, John R, Memphis
* Hummel, John Vernon, Germantown
Humphreys, Robert A, Memphis
- Hunt, Elbert Anthony, Memphis
* Hunt, James Calvin, Memphis
Hunt, Noel Kent, Cordova
Huston, James W, Bartlett
Iansmith, David Hayden S, Memphis
* Ijams, Joe Hartley, Memphis
Ilabaca, Patricio A, Memphis
* Ingram, Alvin John, Memphis
- Irwin, Craig, Memphis
- Jabaley, Ronald Timothy, Memphis
Jabbour, C Eugene, Memphis
Jabbour, J T, Memphis
Jacewicz, Michael, Bartlett
- Jackson, Julie, Germantown
- Jackson, Samuel David, Memphis
Jackson, Robert Lewis, Memphis
* Jackson, Thomas M, Memphis
Jacobs, Arthur Elliott, Memphis
Jalfon, Isaac Mitrani, Memphis
* James, Hal Pearson, Memphis
Jameson, William Dean, Memphis
* Jauchler, Gerard W, Memphis
- Jefferies, Johnny Lynn, Cordova
Jenkins, Gregory Keith, Memphis
Jenkins, Jon Calvin, Memphis
- Jennings, Nicole M, Memphis
Jennings, David Keith, Memphis
- Jerden Jr, David C, Memphis
Jerkins, Gerald Ray, Memphis
- Jernigan, Thomas Wright, Memphis
* Jerome, Anthony Paul, Germantown
Jobe, Mark Tilden, Memphis
Joe, Penn Quork, Memphis
- Johnson, Richard, Memphis
Johnson, Christopher Eric, Memphis
Johnson, James Gibb, Memphis
Johnson, Janet K, Cordova
Johnson, Larry Holliday, Memphis
Johnson, Robert Alan, Germantown
Johnson, Ronald Jackson, Memphis
- Jolley, Kellie A, Memphis
* Jones Jr, George, Germantown
* Jones Jr, Sidney D, Memphis
Jones, Clay V, Memphis
Jones, James Wesley, Cordova
Jones, Joe Paul, Memphis
Jones, R Luby, Southaven, MS
Jones, Robert Riley, Memphis
Jones, Wesley Earl, Memphis
- Jordan, Judith Anne, Memphis
- Joyner, Lisa Camille, Memphis
Joyner, Royce Etienne, Memphis
Justis, E Jeff, Germantown
- Kadrie, Tareck Alec, Memphis
- Kalish, Robin, Memphis
Kandalaft, Victoria A, Memphis
- Kang, Brandon San Joon, Memphis
Kanos, Charles C, Memphis
Kaplan, Edward Steven, Memphis
Kaplan, Jeffrey Stone, New York, NY
Kaplan, Robert Joel, Memphis
Kaplan, Stanley Baruch, Memphis
Karkera, Mohandas S, Memphis
Karmel, Douglas Lawrence, Memphis
Kassees-Wahid, Laila, Memphis
* Kasselberg, Lyman A, Memphis
Kasser, Christine L, Germantown
Katz, Paul Jay, Memphis
- Kazempour, Ace, Memphis
Keegan, Mary Leigh, Memphis
Kellett, Gary Leon, Memphis
Kelley, Bobby Jerald, Memphis
- Kelly, Wayne Scott, Cleveland
Kendrick Jr, William Riley, Memphis
- Kennedy, Richard, Memphis
- Kennedy, Steven, Memphis
Kerlan, Robert Ashley, Memphis
Kerr, Natalie C, Memphis
* Kessler, Henry G, Memphis
Khandekar, Alim, Memphis
Khandekar, Sophia Haque, Memphis
Khuri, Radwan R, Memphis
Kiefer, Patsy R, Memphis
Kiledjian, Vartkes, Memphis
- Kim, Marianne H, Memphis
Kimball, Noab Braden, Memphis
Kimzey, Gary, Germantown
- Kinder, John R, Memphis
- King, Joanna, Memphis
- King, Matthew J, Knoxville
- King, Wendy Lynn, Memphis
King Jr, William Scott, Memphis
* King, Charles Mack, Memphis
King, Stephen R, Memphis
King, Truman Franklin, Memphis
Kinnard, Jennifer J, Memphis
- Kirby Jr, James Thomas, Memphis
- Kirk, Gregory L, Memphis
Kirkpatrick, Robert Dean, Memphis
Kitabchi, Abbas Eqbal, Memphis
Klug, Dean Anthony, Cordova
Knight, William H, Memphis
Knott, David Howard, Memphis
- Kobes, Peter J, Memphis
- Koelsch, David W, Memphis
Koleyni, Asghar, Memphis
- Kong, Li Sheng, Memphis
- Koon, Lee, Memphis
* Koonce, Marshall Lynn, Memphis
Kraus, Alan Jeffrey, Cordova
* Kraus, Alfred Paul, Memphis
Kraus, David H, Memphis
Kraus, Gordon Jerome, Memphis
* Kraus, Melvin M, Memphis
Kraus, Robert M, Memphis
Kreth, Timothy Kerwin, Memphis
Krisle Jr, Joe Richard, Memphis
Kronenberg, Joel I, Memphis
Kudsk, Kenneth Allan, Memphis
Kulp, Roy, Memphis
* Kuykendall Jr, Nathaniel, Memphis
- Kuzucu, Mark E, Chattanooga
* Kyle, Joseph Warren, Memphis
* LaVelle Jr, Herman G, Memphis
LaVelle, David G, Memphis
- Lacy, Michael, Memphis
Lamar Jr, Lucius M, Kingston
Land, Mack A, Memphis
Landau, Reed Stephen, Cordova
* Landsee, Carl George, Millington
Landy, Stephen Hall, Memphis
Langford Jr, C Thomas, Memphis
Langsdon, Phillip Royal, Germantown
- Large, Bradley Patton, Memphis
Larkin, Charles Newton, Cordova
Lasater, Olga E, Memphis
- Lassiter, Gregory, Hendersonville
Laster Jr, Robert Eugene, Memphis
* Lathram Jr, Marvin W, Memphis
Laughlin Jr, Albert E, Memphis
* Laughlin Sr, Albert E, Memphis
- Lavely, William Calvin, Memphis
Lawrence, Jesse Alvah, Memphis
- Lawson, William Edward, Memphis
* Lawson, Robert Edward, Memphis
Lawson, Ronald D, Memphis
Lazar, Edward Harry, Memphis
Lazar, Rande H, Memphis
Lazarov, Stuart J, Cordova
- LeBel, Joseph S, Memphis
Lebovitz, M A, Memphis
Lee, Sidney Reaves, Memphis
Lemmi, Helio, Memphis
Lemmi, Michael A, Memphis
- Lentz, Jonathan, Memphis
Leventhal, Marvin R, Germantown
Levinson, Michael Jay, Memphis
Levitch, Melvyn Abraham, Memphis
Levy, Joe S, Memphis
Lewis, Myron, Memphis
- Libby, Elizabeth L, Memphis
Lieberman, Gerald J, Memphis
Lieberman, Phillip Louis, Cordova
- Lifferth, Geoffrey, Memphis
Light, William Harry, Germantown
Linder, Hilary Francis, Memphis
Lindermuth, John R, Memphis
Lindsey, Regina Suzanne, Cordova
Lindy, Peter B, Memphis
Ling, Frank W, Memphis
Linn, John Edward, Memphis
* Lipscomb, Alys H, Memphis
Lipsey, George Gartley, Memphis
Litch Jr, Melvin, Memphis
- Little, James P, Memphis
Little Jr, William R, Memphis
* Livermore Jr, George R, Memphis
- Lofton, William Bradley, Bartlett
- Long, Mark Anthony, Nashville
* Long, Charles Edward, Memphis
Long, Diane M, Memphis
Long, Thomas E, Memphis
* Long, William E, Memphis
- Looney, Jeffrey Ray, Memphis
- Looney, Mark Roberts, Memphis
* Lougheed, Joseph C, Memphis
Love, Varna Mae Peyton, Memphis
* Lovejoy, George S, Memphis
* Loving, Martha A, Memphis
- Lowe, Stephen C, Memphis
Lozier, Cynthia W, Brownsville
- Lucas, Todd, Memphis
Lunceford, Travis E, Germantown
Luther, Robert Wayne, Memphis
Lynch, Michael Hardy, Memphis
- Mabry, Iris Renee, Memphis
Mabry Jr, Edward Hays, Memphis
* Mabry, Edward Hays, Memphis
Machin, James Elliott, Memphis
* Mackey, William Frederick, Memphis
Maddux Jr, H Benjamin, Memphis
* Maddux, Holt Benjamin, Memphis
Maduska, Albert Lowell, Memphis
Magill, Hubert Lynn, Memphis
- Maban, Lisa, Knoxville
Maijub, Amado Gabriel, Peru, IN
- Major, John Scott, Memphis
Mancell, Jimmie, Memphis
Mandell, Alan I, Memphis
Mangiante, Eugene C, Memphis
- Mann, Pamela Ruth, Birmingham, AL
Mann, James Alan, Memphis
Manugian, Arsen, Memphis
- Manzo, Andrea R, Memphis
Mariencheck, William Irvin, Memphis
Marker, Howard William, Memphis
Marsh, Queen Ann, Memphis
Marshall, Daniel P, Memphis
Marshall, Michael Ralph, Memphis
- Martin, Amy G, Memphis
- Martin, Debra M, Memphis
Martin Jr, Henry Frank, Memphis
Martin, Daniel C, Memphis
- Masoud, Hamidian, Memphis
Massie, James D, Memphis
* Matthews, Oliver S, Memphis
* Mayer, Raymond Franklin, Ward, AR
- Maynard, Samuel L, Memphis
- Mays, Bryce C, Memphis
Mays, Kit Sanford, Memphis
- McAllister II, Jonathan, Cleveland
- McCalla, Catheryne Lynn, Memphis
McCalla, Mary Rainey, Memphis
- McCallie, Shannon Odell, Memphis
McCallum, Lee Wilkes, Memphis
McCloy, Randolph M, Memphis
McClure, James G, Memphis
- McCollum, Josephhua, Memphis
* McCool, D C, Memphis
McCormack, Harold Arthur, Memphis
McDaniel III, Carter E, Memphis
McDonald, Mary Neumann, Memphis
McDonald, Michael Baird, Memphis
McEwan Jr, Robert C, Memphis
McGee, Jesse Edward, Memphis
McGehee, J Lucius, Memphis
McGill, Lora Jannette, Memphis
McGowan, Leslie R, Memphis
McGrew III, Frank A, Memphis
McKenzie, Eugene Eaton, Memphis
McKenzie, Rich L, Memphis
* McLarty, Alexander M, Memphis
* McLarty, Barney Estes, Calhoun, GA
McLendon, Richard Ellison, Memphis
McLeod, Alan Jay, Memphis
- McMackin, Vanessa, Memphis
- McRedmond, Jennifer, Nashville
McSwain, Harold M, Memphis
- Meadows, Angela Evans, Rockwood
- Memzer, Frieda M, Memphis
- Merhoff, Vance F, Memphis
Merigian, Kevin S, Memphis
Meriwether III, Thomas W, Memphis
Merritt, Lauren N, Memphis
- Mertens, Michael, Memphis
Metcalf Jr, James C, Memphis
Metzger, William Edgar, Southaven, MS
Meyer, David, Memphis
- Michael II, Lattimore Madison, Cordova
Michael, Ronald C, Memphis
- Mihalko, Marc J, Memphis
* Miles, Robert Millard, Memphis
* Milford Jr, Lee Watson, Memphis
Miller, Marvin Tyrone, Memphis
- Miller, Paul Warrick, Memphis
Miller III, Robert Horace, Memphis
* Miller, Fountain Fox, Memphis
Miller, Joseph Hardy, Memphis
Miller, Mark P, Cordova
* Miller, Richard Alvah, Memphis
* Miller, Richard B, Memphis
Miller, Stephen Thomas, Memphis
Miller, Thomas Iva, Memphis
- Milligan, Kerry, Memphis
* Milnor Jr, J Pervis, Memphis
* Minkin, Irving C, Memphis
- Mishra, Susmita, Memphis
- Mitchell, Brian Christopher, Memphis
- Mitchell, Gregg E, Jackson
- Mitchell, Gregory C, Memphis
Mitchum, James R, Memphis
* Mitchum, William Robson, Memphis
* Mobley, Everett C, Memphis
* Moeller Jr, Benjamin A, Eads
Moffatt III, William Lee, Memphis
* Mogan, Edward Nenon, Germantown
Moinuddin, Mohammed, Memphis
Moinuddin, Shamim, Memphis
Monaghan, Thomas W, Memphis
- Monday, Jori Lynn, Memphis
Monger Jr, Ralph Horace, Memphis
Montouris, Georgia D, Memphis
Moomey Jr, Charles Bruce, Memphis
- Moore, Jeffrey N, Memphis
* Moore Jr, Fontaine B, Memphis
* Moore Jr, Moore, Memphis
Moore, James A, Memphis
* Moore, Marion Robertson, Eads
Moore, Sarah E, Memphis
Morgan, Jack Colbert, Memphis
Morisy, Lee Richard, Memphis
- Morris, John Thomas, Memphis
Morris, Glenn Scott, Memphis
Morris, John Thomas, Memphis
Morris, William Randolph, Memphis
* Morrison, Larry Burt, Memphis
Morrison, Michael Burch, Memphis
Morrison, Robert E, Memphis
- Morrow, Jennifer, Memphis
* Morse, William Hal, Memphis
Moser, Davis D, Memphis
Moshier, William Hill, Memphis
- Moss, Heather, Memphis
Moss, William Benjamin, Memphis
Motley, Thomas Earl, Memphis
Muhlbauer, Michael Scott, Memphis
Mullen, Jesse G, Memphis
Mullins, Calvin J, Memphis
Murdock, Wade Thomas, Memphis
- Murff, Harvey Johnson, Memphis
Murphy, James Garnett, Memphis
* Murphy, Patrick J, Memphis
* Murrab Jr, William Fitzhugh, Memphis
Murray, Evan W, Memphis
Murray, Ian Farrell, Memphis
Murrmann, Susan G, Memphis

- Myers, Jennifer Braden, Memphis
Myers, William Stanley, Memphis
- Naddy, Gibran B, Hampshire
Nadel, Alan Marc, Memphis
Nakashima, James J, Memphis
- Nanney, Phillip, Cordova
- Nash, Dana A, Memphis
Nash, John Paul, Memphis
Nauert, Timothy Craig, Memphis
Nawaf, Kays, Memphis
- NeKoorad, Haleh, Brentwood
- Newman, Grant, Memphis
- Newman, Jerry Glynn, Memphis
Newman, Jeffrey Miles, Memphis
- Newton, Tara Lee, Shelbyville
- Ng, Chun Leung, Memphis
- Nguyen, Barbara, Memphis
Nichols III, Lorenzo D, Memphis
Nikolovski, Oliver T, Birmingham, MI
- Nix, Jeffrey Alan, Knoxville
Nobles Jr, Eugene Rodman, Memphis
Noe, Horace Norman, Memphis
- Noonan, Holly, Memphis
* Norman, Robert Sidney, Germantown
* North, William C, Buchanan
- Northrop, Bob, Memphis
O'Brien Jr, Thomas F, Memphis
- O'Cain, Heather, Memphis
O'Connell, John F, Germantown
O'Sullivan, Patrick Joseph, Memphis
* Ogle, Evelyn B, Memphis
Okrah, Amos, Memphis
- Oldham, Teresa A, Memphis
* Olim, Charles Burton, Memphis
Olinger, Rodney Glenn, Memphis
Opie, Joseph Charles, Cordova
* Orpet Jr, Phil E, Memphis
- Orthoefer, Carl, Memphis
Osborn, Frank Jackson, Memphis
Oster, Catherine J, Cordova
Oswald, William J, Memphis
- Ourth, Karen, Memphis
Outlan, John Edward, Collierville
* Outlan, William F, Collierville
Owen Jr, Edmond W, Memphis
- Owens, Schwanda Gail, Memphis
Owens, Donald D, Memphis
Owens, James Harvey, Memphis
* Packer, Henry, Memphis
Page, Gene Ruffner, Memphis
Paidipalli, Babu Rao, Memphis
Painter, Max Wesley, Memphis
- Pal, Mimi Indrani, Memphis
- Pallera, Arnel, Cordova
Palmer IV, Robert E, Memphis
- Palmieri, Mema, Memphis
Palmieri, Genaro Miguel A, Memphis
Palmieri-Sevier, Ana K, Memphis
- Parish, Brook, Memphis
- Park, Christin C, Memphis
Parker, Joseph, Memphis
Parks, Frank D, Collierville
- Parnell Jr, Donald Hudson, Memphis
* Parrott Jr, Charles William, Orange Beach, AL
Parsioon, Fereidoon, Germantown
* Paster, Samuel, Santa Monica, CA
* Pasternack, Morris, Memphis
Patchen, Mary Jane Ilsemann, Memphis
Pate, James W, Memphis
- Patel, Shilpa, Memphis
Patel, Alpa V, Martin
- Patil, Sushil Raj, Memphis
- Patterson, Kirsten J, Memphis
Patterson III, Russell H, Memphis
Patterson, Anthony Lynn, Memphis
Patterson, Charles Richard, Memphis
Patterson, Kelly, Memphis
Patterson, Sam Polk, Collierville
Patterson, Stanley Martin, Memphis
* Paul, Raphael Nathan, Memphis
Payne Jr, Earnest B, Memphis
Payne, Paul A, Memphis
Pearson, Richard McQuiston, Memphis
- Pecha, Marc Daniel, Memphis
Pedigo, Phillip Adler, Memphis
Peeler III, George H, Memphis
Peeler, David Wallace, Memphis
Pender Jr, John Vincent, Memphis
- Pendergrass, Margaret B, Nashville
Perry, Edgar Emrich, Memphis
- Peterson, Matthew, Memphis
Petri, Jan H, Cordova
- Peyton, James David, Memphis
Pfeiffer, Ronald Frederick, Memphis
- Pham, Loc B, Memphis
- Pharris, Larry J, Hermitage
Phelps, William Charles, Memphis
- Philips, Kay Lynn, Memphis
- Phillips, Timothy D, Memphis
Phillips Jr, F Edward, Memphis
Phillips, Barbara Lynne, Memphis
Phillips, Barry Brent, Memphis
Phillips, Jerry Clyde, Memphis
* Phillips, William Earl, Memphis
- Philyaw, Kathy Renee, Cordova
Photopulos, Guy J, Memphis
* Pian Jr, Maurice C, Memphis
* Pigott, John D, Memphis
Pinson, Era Louise, Memphis
Pinstein, Martin Lee, Memphis
- Pirani, John F, Memphis
Pitcock, James Allison, Memphis
Platkin, Alan Bailey, Memphis
Plunk Jr, Otis A, Memphis
- Plyler, Brett Charles, Memphis
- Pollock, Chris, Memphis
Polly, Stuart McGrath, Memphis
* Porter, Columbus Hassell, Birmingham, AL
Porter, William Richard, Bartlett
Porterfield, James G, Memphis
Posey, Michael Evans, Memphis
Poston, William Mason, Memphis
Powell, Carroll E, Memphis
Powell, Timothy John, Memphis
- Prather, Laura Johnetta, Memphis
Pratt, Edward S, Memphis
Pratt, Thomas H, Memphis
- Price, Donald, Memphis
* Price, James Howard, Memphis
* Price, Robert Allen, Memphis
* Pridgen, Stephen Allen, Memphis
Pridgen, William Roby, Memphis
* Prieto Jr, Luis Carlos, Memphis
Pritchard, Frances E, Memphis
Proctor, Russell Jay, Memphis
- Pruett, Billy D, Cordova
Pruitt, David B, Memphis
- Puckett, Kim Leigh, Memphis
Pulsinelli, William A, Memphis
- Purvis, John Haigler, Memphis
* Putman, Billie Harold, Southhaven, MS
Quigley, Karen K, Memphis
* Quinn III, Peter Joseph, Memphis
Rada III, John B, Memphis
Raghavaiah, N V, Memphis
- Ragsdale, Timothy F, Edmond, OK
Ragsdale, K Blake, Memphis
Rahman, Mahfuzur, Memphis
Raines, Edwin Allen, Memphis
Raines, Richard Brodnax, Memphis
* Rainey, William Thomas, Memphis
Rains III, Boyce Manrin, Memphis
Ramanathan, Jaya, Memphis
Ramey III, Daniel Randolph, Memphis
Randolph, Paul Douglas, Memphis
Rao, Bhaskar Narayan, Germantown
- Rasnake, Mark Steven, Memphis
Rawtani, Pallavi V, Memphis
Ray, Morris William, Memphis
- Rayder, Robert, Memphis
Rayudu, Sreedhar Rao, Germantown
Reaves, Edward McCormick, Memphis
Redden, Ruth Anne, Memphis
- Reddick, Bradley H, Memphis
- Reddy, K Gautham, Tullahoma
Reddy, Reju C, Memphis
Reed, Cheston Murray, Memphis
* Reed, Edward Wilson, Memphis
Reed, Mark Loyd, Memphis
Reeder, Robert Canada, Memphis
* Reese, Halden Eugene, Memphis
Reid, David Hollis, Memphis
- Reimers, Elizabeth E, Memphis
Reisser Jr, John Milton, Memphis
Rentrop, Walter Anton, Memphis
Rentrop, William Emil, Memphis
- Revelle, Michael, Memphis
Reyes, Nora V, Memphis
Reynolds, Gary Lynn, Memphis
Rezaei, Rebecca J, Memphis
Rhodes Jr, Charles T, Memphis
Rice, Steven Nicholas, Memphis
- Richardson, Greer, Memphis
Richardson III, Robert L, Paris
Richardson Jr, Robert Lee, Memphis
Richardson, Elbert Greer, Germantown
Richey, E T, Memphis
Riggs Jr, William Webster, Memphis
* Riggs, Charles R, Memphis
- Rigsby, Thomas W, Montgomery, AL
* Riley, Frances Osborn, Memphis
- Rittenberry, Hunter, Shelbyville
Roane, Jourdan Archibald, Cordova
Robbins Jr, Samuel Gwin, Memphis
Robbins, Edward T, Memphis
Robbins, K Thomas, Memphis
- Roberson, Arthur E, Memphis
Roberts, Larry K, Memphis
- Robertson, Bill, Memphis
- Robertson, Jennifer Shaw, Memphis
Robertson, James Thomas, Olive Branch, MS
Robertson, Jon Hobson, Memphis
Robinson Jr, John Edward, Memphis
* Robinson, James A, Memphis
Robinson, Lloyd Edward, Memphis
Robinson, Wiley Thomas, Memphis
Robison Jr, Lowell Benjamin, Memphis
Rodney, William M, Memphis
- Roe, Karen, Memphis
- Rogers, J Paul, Memphis
- Rogers, Robert, Cordova
- Rojas, Phil Andrew, Memphis
Rojas, Norberto, Memphis
- Rone, Christopher, Memphis
Roney, Ronald Steven, Memphis
Rosen, Gerald Michael, Memphis
Rosenberg, Zachary, Memphis
Rosensweig, Jacob, Memphis
- Rosine, Amy Rebecca, Memphis
- Ross, Kerry Wayne, Memphis
- Ross, Shea O'Neal, Memphis
- Rosser, Katherine, Memphis
Routt Jr, William Edward, Memphis
* Ruch Jr, Walter Allwein, Memphis
Rucker, James Daniel, Germantown
Rudorfer, Bennett Lewis, Memphis
Ruleman, Chester Allan, Memphis
- Rumley, Carla R, Memphis
* Runyan Jr, John William, Memphis
- Rushing, Rodney Scott, Memphis
Rushing, Van, Memphis
- Russell, Kimberly Ann, Memphis
Russell Jr, John Murray, Memphis
Russell, Thomas Anthony, Memphis
- Russo, Robert Anthony, Memphis
Russo, William Louis, Memphis
Rutherford, Joe Bostick, Memphis
Sabbah, Ronnie, Cordova
Sacks, Harold Samuel, Memphis
- Sadler, Scott Michael, Memphis
Safley Jr, Charles Franklin, Memphis
* Sage, Fred P, Southaven, MS
- Sahai, Anjali, Memphis
- Saito, Kaori, Memphis
Salazar, Jorge E, Memphis
Samaha, Joseph K, Memphis
- Samardar, Polya, Memphis
Sammons Jr, Lehman Clark, Cordova
Samuels, Alan D, Memphis
- Sanborn, Christopher, Memphis
Sander, Craig J, Memphis
- Sanders, Chris D, Memphis
- Sanders, Kevin, Cottontown
Sanders, B Jeffrey, Memphis
Sanford Jr, Jack Carter, Memphis
Sanford, David Marshall, Memphis
Sanford, Robert Alexander, Memphis
Sargent, Susie Jane, Lakeland
Sauter, Robert F, Memphis
Saxton Sr, Grady L, Memphis
- Scales Jr, Thomas Risdon, Memphis
* Schaeffer Jr, S J, Memphis
Schaeffer, Alan R, Memphis
* Schaffer, Donald Earl, Memphis
Schanzer, Mary Cathleen, Memphis
- Scharfstein, Benjamin Samuel, Memphis
Scheer, Thomas Frederick, Memphis
* Schettler, Betty J, Memphis
Schettler, William Heymoore, Memphis
Schlesinger, Victor Adler, Memphis
Schoettle Jr, G Phillip, Memphis
- Scott, Joseph, Memphis
- Scott, Stephanie Ann, Knoxville
* Scott III, Benjamin F, Memphis
Scott Jr, Daniel J, Memphis
Scott, Edward Patton, Memphis
Scott, Hugh, Cordova
Scott, Joseph Manson, Memphis
Scott, Randall Lee, Memphis
Scruggs, Jerry L, Memphis
* Seale, James, Memphis
- Searcy, Harriett E, Memphis
Sehes, Jeno Imre, Memphis
- Seehorn, Charles, Memphis
Segal, Anthony, Memphis
* Segal, Jack, Memphis
* Segal, Maurice P, Memphis
Segal, Robert Henry, Memphis
* Segerson, Edward C, Memphis
- Sehnert, Heather, Memphis
- Sellers, Angela Denise, Memphis
Sexton, Ray Owen, Memphis
Seymore, Melvinie E, Memphis
Shapiro, Marvin Louis, Germantown
Shappley Jr, William Vance, Memphis
- Shaw, Merri, Cookeville
Shea III, John Joseph, Memphis
* Shea Jr, John Joseph, Memphis
Shea Jr, Martin Coyle, Memphis
Shearin, Robert P N, Memphis
Shell III, Dan H, Memphis
Shelton, Brixey R, Memphis
Shelton, Thomas B, Memphis
Shiffman, Stephen Murray, Memphis
- Shoemaker, Heidi, Memphis
Shurley III, William R, Cordova
Siegel, Barry Ross, Memphis
Siegel, Jerome Seymour, Memphis
- Sieveking, Nicholas E, Brentwood
Sievers, Richard E, Memphis
Sikes, James C, Memphis
Silverman, Michael N, Memphis
Simmons, Bryan Paul, Memphis
* Simmons, James C H, Memphis
Sims, Clifford W, Memphis
Sisk, Thomas David, Germantown
- Sizemore, Jay M, Memphis
Skaggs, Marvin Richard, Memphis
* Skinner, Edward Folland, Memphis
Skinner, Robert B, Memphis
Sloas, David Dale, Memphis
Slutsky, Avron Abe, Memphis
Smiley, Linda M, Memphis
- Smith, C Christopher, Memphis
- Smith, Deirdre, Memphis
- Smith, J Suzanne, Memphis
- Smith, Mathew Dean, Memphis
- Smith, Tamra Lee, Jackson
Smith, Clarke B, Memphis
Smith, Clyde Gaylon, Memphis
Smith, Kirby Lee, Memphis
Smith, Maurice Mell, Memphis
Smith, Ricky Allen, Memphis
Smith, Robert James, Memphis
Smith, Stanley L, Memphis
Smith, Vincent D, Memphis
Smith, W Chapman, Memphis
* Smythe Jr, Frank Ward, Memphis
Snider, Charles V, Memphis
- Snyder, Joy, Memphis
Snyder, Dowen Ervin, Germantown
* Sohm, John J, Memphis
Solomito, Vincent Lee, Cordova
- Solomon, Dennis R, Memphis
Soskel, Norman Terry, Memphis
- Spears, Amy Leigh, Memphis
- Speckhart, Susan Ashley, Memphis
Spencer, Judy, Memphis
- Spigel, David, Memphis
Spiotta Jr, Eugene J, Memphis
Spiotta, Eugene Joseph, Memphis
Spiotta, Larry B, Memphis
- Sprouse, Richard, Memphis
Stallings, John M, Memphis

Stamper, James J, Memphis
* Stanford, Carl Cooper, Memphis
Stanford, James Franklin, Memphis
Stanley Jr, Thomas V, Memphis
Stegman, Marc Hadley, Memphis
Stein, Lee S, Memphis
Steinman, Fred, Memphis
Stentz, David L, Memphis
Stephens, Raj K, Cordova
* Stepp, William Price, Memphis
Stern, Thomas Neuton, Memphis
- Stevens, Jeff, Memphis
* Stevenson, Cleo Wilson, Memphis
* Stevenson, Edward N, Memphis
- Stewart, Michael Todd, Meridian, IN
Stewart, David G, Memphis
* Stewart, Marcus Jefferson, Memphis
Stewart, Sherrill Bryce, Memphis
- Stockton, Cindy, Memphis
- Stone, Natascha B, Memphis
Strasberg, Gary David, Memphis
* Stratton, Henry Thomas, Memphis
Strock, Sylvia S, Memphis
* Stubblefield, Robert J, Memphis
- Sullivan, Jeremy Tyson, Memphis
Sullivan, Donald James, Germantown
- Summers, Barbara J, Memphis
Summitt Jr, Robert L, Memphis
Summitt, Robert Layman, Memphis
Sutherland III, Arthur J, Memphis
Swamy, Aligiri, Memphis
- Sweeten, Bianca J, Memphis
- Swords Jr, Robert Lee, Memphis
* Sydnor, Elmer W, Memphis
Tabor, Owen Britt, Memphis
* Tacket, Hall Sanford, Chevy Chase, MD
- Takayama, Megumi, Memphis
Tanenbaum, Mark Harris, Memphis
Tanner, Paul Russell, Memphis
- Tape II, John Edward, Memphis
- Taylor, Greg M, Manchester
Taylor III, Herbert A, Memphis
Taylor Jr, William Wood, Memphis
Taylor, Edwin Oscar, Memphis
Taylor, John Charles, Memphis
Taylor, Martha Neumann, Memphis
Taylor, Susan, Memphis
Taylor, William Z, Memphis
- Teaster, David Sean, Memphis
Tejwani, Indurani A, Memphis
Tellez, Francisco L, Memphis
- Templeton, Lucinda, Memphis
Templeton, Terry P, Memphis
Terhune, Ronald Lytle, Memphis
Terrell Jr, William, Memphis
Thomas Jr, Lloyd R, Germantown
Thomas, Oswald Henry, Bartlett
- Thompson, Christopher O'Neal, Knoxville
- Thompson, Keith Shannon, Manchester
Thompson, Barry F, Memphis
Thompson, Greg L, Memphis
Thompson, Jerome W, Memphis
Thompson, Terry L, Memphis
Thompson, Tommy C, Memphis
Thomsen, William B, Memphis
- Thorburn, Gerald M, Memphis
Threlkeld, Michael Gavin, Memphis
Threlkeld, William Cleage, Cordova
Tidd, Margaret Elizabeth, Memphis
- Tidwell, Stephen Craig, Jackson
- Tinker, Cory Ray, Memphis
- Tipps, Jeffrey E, Memphis
Tipton, Robert Eugene, Memphis
Todd, Margaret Ryan, Memphis
Todd, Tanja Lu, Memphis
- Tolbert, Audrey Karen, Memphis
Tonkin, Allen K, Memphis
Tonkin, Ina L D, Memphis
Tooms, Robert Edwin, Germantown
- Torbett, Lea, Memphis
Townsend III, Arthur M, Memphis
- Townsend-Jones, Janice, Memphis
Trautman, Robert J, Memphis
- Treadway, Travis, Memphis
Treadwell III, George H, Cordova
Trew, Gary F, Memphis
- Trombley, Paul, Germantown
Trotter, Michael, Memphis
- Tsai, Judy, Memphis
Tuberville, Audrey Whaley, Memphis
- Tucker, Tammie M, Memphis
* Tullis Jr, I Frank, Memphis
Tullis, Kenneth Frank, Memphis
* Turley Jr, Hubert King, Memphis
* Turley Jr, John C, Memphis
* Turman, Prentiss A, Memphis
Turner, George Randolph, Memphis
Turner, James E, Germantown
Turner, Jan Lewis, Memphis
* Tyler, Louis Edward, Memphis
* Tyrer Jr, Austin Roy, Memphis
* Tyson Jr, William T, Memphis
- Tysz, Samantha, Arlington, VA
Upshaw, James Jerry, Memphis
Upshaw, Jefferson Davis, Memphis
Usdan, David Aaron, Memphis
- Utley, Jennifer E, Memphis
* Vaccaro, Eugene A, Memphis
VanFrank, Timothy D, Memphis
- Vandergriff, Joseph V, Knoxville
- Vargas, Kenneth Eugene, Memphis
Varner Jr, Claude, Memphis
Varner, James Carroll, Memphis
Vasu, Renga I, Memphis
Vera, Santiago R, Memphis
Verner, Walter Eugene, Memphis
Vernon, Michael Lee, Germantown
- Vick, Valerie Lanette, Memphis
Vieron, Leonidas Nicholas, Memphis
* Vincent, John Robert, Walls, MS
- Vinson, John W, Memphis
Voeller, Guy R, Memphis
Vogelfanger, Roger B, Memphis
Vookles, John Thorn, Memphis
Vu, Trong Van, Memphis
Waggoner, Stephen M, Memphis
Wake, Robert William, Memphis
- Waldrup, Phillip D, Memphis
Walker Jr, Parks W, Memphis
Walker, Frances Carolyn, Memphis
Walker, Robert A, Germantown
Walker, William Alan, Memphis
Wallace Jr, Charles Russell, Memphis
* Wallace, James Ashford, Memphis
* Wallace, Peter B, South Hamilton, MA
- Wallis, Margaret, Memphis
- Walls, Ulysses C, Memphis
Wallstedt, Bruce A, Memphis
Walsh, John Thomas, Memphis
Walsh, William K, Memphis
Walzer, Yair, Memphis
Wanderman, Richard, Memphis
Ward, John David, Memphis
Wardlaw, Lee Lyle, Memphis
Warner Jr, William Charles, Memphis
Warner, Ronnie M, Memphis
Warr III, Otis Sumter, Memphis
* Warr, Otis S, Memphis
Warren, Jeffrey S, Memphis
* Watkins, William W, Memphis
Watridge, Clarence B, Memphis
Watson, Donald C, Memphis
Watson, Susan R, Memphis
Weatherly, Mark Willard, Memphis
- Webb, Michael R, White Pine
Webb, Ty Townsend, Memphis
Webber, Bruce L, Memphis
Weber III, Alvin Julian, Memphis
Weeks, Albert E, Memphis
Weems, Joseph Lell, Memphis
Weems, Thomas Doyle, Germantown
Weiman, Darryl Seth, Memphis
Weinberg, Joseph A, Germantown
Weir III, Alva B, Germantown
* Weir Jr, Alva Bowen, Memphis
- Weiss, Kenneth S, Memphis
Weiss, Joseph F, Memphis
Weiss, William T, Memphis
- Welles IV, Edward Hunter, Memphis
Wells, Mark S, Memphis
Wells, Van Henry, Memphis
- Wener, Steven, Memphis
* Wennemark, James R, Germantown
Wesberry Sr, Jesse Malpass, Memphis
Wesche, W Allen, Memphis
West, Harold Maxell, Memphis
West, James M, Memphis
Westmoreland, Daniel K, Memphis
- White, Beverly Suzanne, Memphis
- White II, John, Memphis
White III, Thomas Jefferson, Memphis
White Jr, James Harold, Memphis
White, Charles Edward, Memphis
White, Frank Louis, Memphis
* White, William Guerin, Memphis
Whitehead, William Jerry, Germantown
Whitlock, Lawrence Wayne, Memphis
Whittle, Allison Paige, Memphis
* Wiener, Isadore David, Memphis
Wiener, Robert Alan, Memphis
* Wilder, William Wiggins, Memphis
* Wilhite, Joe Lynn, Gulf Breeze, FL
- Wilkinson, Kimberly Sue, Memphis
Wilkinson, Ephriam Bailey, Memphis
- Williams, Jeff T, Memphis
Williams, Beverly D, Memphis
Williams, Hugh Hernes, Memphis
Williams, Keith Dawson, Memphis
Williams, Mark A, Johnson City
Williams, Paul Herbert, Memphis
Williams, Trilby E, Nashville
Wilson, Arthur J, Memphis
Wilson, Donald Bruce, Memphis
* Wilson, Harry Williamson, Cordova
* Wilson, James E, Memphis
Wilson, John McCullough, Memphis
Wilson, Raymond Edward, Cordova
Winbery, Stephen L, Memphis
Winfield, Alan C, Germantown
Winfield, David Franklin, Memphis
- Winkelmann, Julie Anne, Collierville
- Wiser, Eldred, Memphis
- Wisniewski, Joseph M, Memphis
Witherington, John M, Memphis
Witherspoon Jr, Frank G, Memphis
- Witte, Melissa, Memphis
Witte III, Dexter Hathaway, Memphis
Wolf, Rodney Yale, Memphis
Wong, Frank S, Memphis
Wong, Kenneth, Bartlett
- Wood, Kenneth W, Memphis
Wood II, George W, Memphis
* Wood, Matthew W, Memphis
Wood, Thomas Oval, Memphis
- Woodall, Cynthia C, Memphis
Woodall Jr, Jesse C, Memphis
Woodall, Charles Jackson, Memphis
Woodall, Melanie L, Cordova
Woodbury Jr, George, Cordova
- Woods III, Dexter L, Memphis
Woodside, Jeffrey R, Memphis
Woodson, Gayle E, Memphis
* Woolley, Clifton Ward, Memphis
* Wooten, Richard Lindsey, Memphis
Wooten, Robert Strode, Memphis
* Workman Jr, Claude H, Marietta, GA
* Worrell, Jerry Lewis, Memphis
Wortham III, George F, Memphis
Worthington, Julian Mack, Memphis
* Wrenn Jr, Earle L, Memphis
Wright II, Phillip E, Germantown
Wright Jr, Leonard D, Memphis
Wright, Becky Buckley, Memphis
Wright, Dana John, Memphis
Wright, Lance Jefferson, Cordova
Wruble, Lawrence David, Memphis
* Wurzburg, Henry, Memphis
- Yancey, Andrea Elizabeth, Memphis
Yarber, Robert H, Memphis
Yarbrough, Robert R, Memphis
Yates, Linda Kay, Cordova
Yates, Scott W, Memphis
* Young, Jack G, Memphis
* Young, Jean Anne, Memphis
Young, Mark S, Memphis
Younger, Carl Thomas, Memphis
- Zachary, William Henry, Memphis
Zanella Jr, John, Memphis
Zanone, Michael T, Germantown

MONROE COUNTY MEDICAL SOCIETY

Allen, James Lester, Sweetwater
DeFreitas, Eric Allan, Sweetwater
Evans, Thomas S, Sweetwater
Gettinger, Josephhua S, Madisonville
Hahn, Michael Wayne, Athens
Harrison, Celia Huddleston, Philadelphia
Harvey, William L, Sweetwater
Hays, Robert Daniel, Cleveland
* Hyman Jr, Orren Williams, Sweetwater
Kozawa, Kenya, Sweetwater
Levin, Barbara Ann, Madisonville
Lowry, Frank H, Madisonville
Ness, James W, Tellico Plains
Villanueva, Ramon, Sweetwater
Zee, Paulus, Sweetwater

MONTGOMERY COUNTY MEDICAL SOCIETY

Anderson, Paulette D, Clarksville
* Atkinson, Edward R, Clarksville
Baggett, Henry W, Clarksville
Beazley, William Cooper, Clarksville
Bendt, Robert Richard, Clarksville
Boyd, Alton Reuther, Clarksville
Bradley, Joel F, Clarksville
Brandon, Gilbert T, Clarksville
* Brewer, Carlos B, Clarksville
Bush, Joel Gregory, Clarksville
Butler, Thomas W, Clarksville
Carrigan, Vernon M, Clarksville
Cha, Paul Sangyong, Clarksville
* Cole, Herbert Rowland, Clarksville
Crawford, Donald A, Clarksville
Creekmore, Harry S, Clarksville
Cunningham Jr, Thomas M, Clarksville
Daugherty, Stephen Franklin, Clarksville
* Doane Jr, Samuel N, Clarksville
Doty Jr, Robert D, Chapmansboro
Durrett Jr, Dawson W, Clarksville
* Farrar, James Thomas, Clarksville
Faust, Larry M, Clarksville
Ferraraccio, Blaise E, Clarksville
Futrell, Danny W, Nashville
Garner, William L, Clarksville
Glassell, Edwin C, Clarksville
* Griffin, V H, Clarksville
Gullett, David Laird, Clarksville
Hall, Billy T, Clarksville
Hampton, James Edward, Clarksville
Harris-Ford, Laurie Ann, Clarksville
Holland, Jerry Michael, Clarksville
Hong, Doug Un, Clarksville
Hooker, Michael D, Clarksville
Hudson III, William D, Clarksville
Hudson, Robert W, Clarksville
Humberd, Quentin A, Clarksville
* Iglehart, Bryan T, Clarksville
* Jordan, Edwin Constantine, Clarksville
Kadakia, Jatin K, Clarksville
Kennedy, Howard R, Clarksville
Kent, Stephen W, Clarksville
Kinney, Wesley Walker, Clarksville
Koehn Jr, Robert C, Clarksville
Kurita, George I, Clarksville
Larkins, Gary L, Clarksville
Ledbetter, Buford B, Clarksville
Lee, Robert Henry, Dover
Lemoine, Fritz F, Clarksville
Ligon, Douglas Wister, Erin
Limbaugh Jr, James W, Clarksville
Lind, Roger Charles, Clarksville
Lowe Jr, Reginald S, Clarksville
* Luton, Oaklus Samuel, Clarksville
* Lyle, William Green, Clarksville
Martin, Daniel Ernest, Erin
* McCampbell, Frank G, Clarksville
McClure III, Christopher C, Clarksville
McLaughlin, Steven G, Clarksville
Milam, J Denise, Clarksville
Miles Jr, Joseph William, Clarksville
Miller, David Stuart, Clarksville
Mitchum, Albert Jackson, Clarksville
Moessner, Harold F, Clarksville
Montgomery, Tony Johnson, Clarksville
Moore, W R, Clarksville
Patel, Anil, Clarksville
Peacher, Terry Gene, Clarksville
Pedigo Jr, W Joel, Clarksville
Perales, Angel U, Clarksville
Peterson, Keith D, Clarksville
Prine Jr, William Wesley, Clarksville
Pritchett, Elizabeth Estelle, Clarksville

Richardson, Donald Ray, Clarksville
Roads, Timothy R, Clarksville
* Ross, John W, Clarksville
Rowe, Joanna E, Clarksville
Saleh, Adel S, Clarksville
Salyers, Steve G, Clarksville
Setzkorn, Ronald Karl, Clarksville
Siler, Rita Anne, Clarksville
Silvey, Gary Lynn, Clarksville
Smith, James Roy, Clarksville
Steely, William Morris, Clarksville
Vann, Harold Francis, Clarksville
Vermillion, R J, Clarksville
Walker, Joe R, Clarksville
* Wall Jr, William H, Clarksville
Wiles, Carroll Lee, Clarksville
Williams, David B, Clarksville
Wilson, Frank, Clarksville
Wright Jr, John Fay, Clarksville
Youngblood, Robert Carter, Clarksville

NASHVILLE ACADEMY OF MEDICINE

Abisellan, Georgina A, Nashville
Abram, Steven Ronald, Nashville
* Acree Jr, Maurice Mason, Nashville
* Adams, Crawford W, Brentwood
Addlestone, Ronald B, Nashville
Adkins Jr, Robert Benton, Nashville
Adkins, Royce Terrell, Goodlettsville
Adkins, Thomas G, Nashville
Agbunag, Arnulfo Abat, Madison
Akin, Gordon Clay, Hermitage
Akin, Judith Blevins, Nashville
- Albright, Kristen Leah, Nashville
* Alcantara, Ildefonso A, Nashville
- Alemen, Michael Abraham, Nashville
Alexander Jr, Clyde W, Nashville
Alexander, Dave A, Nashville
Alexander, William Frederick, Nashville
Alfery, David D, Nashville
Alford Jr, William Cutter, Nashville
Alford, Robert H, Nashville
* Allen Jr, Joseph H, Nashville
Allen Jr, Newton Perkins, Nashville
Allen, David Wayne, Nashville
Allen, Terry Reynolds, Nashville
Allen, Vaughan Arthur, Nashville
Allen, Verne Elwood, Nashville
* Alley Jr, J Clyde, Nashville
* Allison Jr, Fred, Nashville
Alper, Benjamin J, Nashville
Altenbern Jr, Douglas Carlton, Nashville
Altenbern, Darrington Phillips, Nashville
Altieri, Lisa A, Nashville
Anand, Vinita, Nashville
* Anderson Jr, Arthur R, Nashville
Anderson Jr, Edwin B, Nashville
Anderson Jr, James E, Nashville
* Anderson Jr, James S, Nashville
Anderson, Allen F, Nashville
Anderson, Edward Eugene, Nashville
* Anderson, Edwin B, Nashville
* Anderson, H R, Nashville
Anderson, James Charles, Nashville
Anderson, James Patrick, Madison
Anderson, John Eugene, Nashville
Anderson, William Clyde, Nashville
Anderson, William Joseph, Nashville
Arendale Jr, Charles R, Nashville
Arendall II, Rex E, Nashville
Arnett, Darrell G, Nashville
Arney, Casey C, Nashville
Arnold, Edward Stanley, Nashville
Arnold, Fredrick S, Nashville
Arnold, Larry Totty, Nashville
Arns, Patricia A, Nashville
Arrindell, Everton Leroy, Brentwood
Arrowsmith, Peter Noel, Nashville
Asher, Harvey, Nashville
Asher, Jordan Ross, Nashville
Atkinson III, Ralph C, Nashville
Austin, John Clayton, Nashville
Avant, George Ray, Nashville
Averbuch, Mark Stephen, Nashville
Avery, James Kelley, Nashville
Awn, Carl C, Nashville
Aylor, Sarah Brown, Nashville
Baer, Harry, Nashville
Bailey, Allan H, Nashville
Bailey, Stephanie B C, Nashville
Baker, Jack R, Nashville
Baker, Thurman Dee, Nashville
Baldwin, James Marvin, Ashland City
Ball, Stephen K, Nashville
Ballinger, Jeanne F, Nashville
* Bandy, Preston H, Nashville
Barnes Jr, Maurice C, Hermitage
Barnett, Donald R, Nashville
Barnett, Patrick A, Brentwood
Barnett, Paul Harold, Nashville
Barnett, Robert Burton, Nashville
Barrow, Mary Alice, Nashville
Barton, Ben R, Nashville
Barton, David, Nashville
* Bass, Allan Delmage, Nashville
Batchelor, E Dale, Nashville
* Batson, Randolph, Troy, AL
Battaglia, Edoardo Luigi, Nashville
* Bayer, D Scott, Nashville
Beattie, Charles, Nashville
* Beazley, Luthur, Nashville
Beck, Charles Bernard, Madison
* Beck, Larson Dale, Nashville
Beckham, Michael T, Nashville
* Beckwith, Merton M, APO, AE
* Begtrup, Robert O, Nashville
Behar, Ted A, Brentwood
Belden, Richard A, Nashville
Bell, Robert Le Roy, Nashville
Bender Jr, Harvey W, Nashville
Bennie, Jeffrey Barker, Nashville
Benning, Thomas R, Nashville
Benson Jr, Ralph C, Nashville
* Benson, George N, Nashville
Berger, Brian Lee, Nashville
Berger, Kurt Vincent, Nashville
Berklacick, Frank Martin, Nashville
Berman, M Lawrence, Nashville
* Bernard, Louis J, Nashville
* Bernard, Stanley, Nashville
Bernet, William, Nashville
Berrie, Warren R, Nashville
* Berry, Jeoffrey, Nashville
Besharian, Charles M, Nashville
Best, Tony P, Nashville
* Beveridge, John H, Nashville
Bienvenu, Gary Louis, Brentwood
Bihl-Miranda, Patricia M, Nashville
Bilhartz, David L, Nashville
Biliyar, Vedavyasa B, Nashville
* Billings Jr, Frederic T, Nashville
Binkley Jr, William Joseph, Madison
Birdwell, Ben Jason, Hermitage
Bishop Jr, Eugene L, Nashville
Bishop, Michael Robert, Nashville
* Bistowish Jr, Joseph M, Nashville
* Black Jr, James N, Tenafly, NJ
Blake, Maryanne, Nashville
Blanke, Charles D, Nashville
Blanton, Donald McLain, Nashville
Blatt, David Robert, Nashville
Bluth, Raymond Francis, Nashville
- Bobo, Michael Lee, Hermitage
Bodner, Stanley Jacob, Hermitage
Boehm, Frank Henry, Nashville
Bolds, John Michael, Nashville
Bolin, Marion G, Nashville
Bolus Jr, David Norman, Nashville
Bonau, Roger Anthony, Nashville
Bond III, John Benjamin, Nashville
Bond, John Benjamin, Nashville
Bone, Robert Carver, Lebanon
Bonner, Kevin Joseph, Brentwood
Booker III, Benjamin F, Nashville
Bookman, James Andrew, Madison
Booth Jr, Glenn H, Nashville
Bottomy, Michael Bruce, Nashville
* Bounds Jr, George William, Nashville
Bowers, Patricia Lynn, Nashville
* Brackin Jr, Henry B, Nashville
Bradham, W Glenn, Nashville
Brakefield, James Marion, Nashville
Brandes, Jan L, Nashville
Brannon, C Travis, Nashville
Brantley, Barrett Duane, Nashville
Braren, H Victor, Nashville
Breinig, John Boyers, Nashville
Brennan, Margaret M, Nashville
Brennan, Margaret Mary, Nashville
Bressman, Phillip L, Nashville
Brigham, Kenneth L, Nashville
Brighton, Patrick A, Nashville
Briley, Susan, Nashville
Brimmer II, Robert A, Nashville
Brin, Edward Neal, Huntsville, AL
Brock III, John W, Nashville
Brodows, Robert G, Brentwood
Brothers, Donald Troup, Nashville
Brothers, John Cunningham, Nashville
Brown Jr, Walter U, Nashville
Brown, Douglas H, Nashville
Brown, Kermit R, Nashville
Brown, Mary Jane, Brentwood
Brown, Nancy J, Nashville
Brown, Pamela E, Madison
Brown, Phillip Pendleton, Nashville
Browne, Edward W, Nashville
Bruno III, John, Nashville
* Bryan, John O, Nashville
Bryant, James David, Nashville
Bryant, Susan H, Nashville
* Buchanan Jr, Robert Norman, Nashville
Buchanan, Richard Durr, Brentwood
Buckspan, Glenn S, Nashville
Bueno, Reuben A, Nashville
Burbank, Sally Willard, Nashville
Burch Jr, Roy Perry, Brentwood
* Burd, Joseph G, Nashville
Burkhalter, Michael Terry, Nashville
Burks, Helen C, Hendersonville
Burley Jr, Howard Lawrence, Nashville
Burnes, James Edmond, Madison
Burnett, Lonnie S, Nashville
Burns, Gerald Robert, Hermitage
Burrichter, Calvin A, Nashville
Burrus, Daniel S, Nashville
Burrus, George R, Nashville
Byrd III, Benjamin F, Nashville
* Byrd Jr, Benjamin F, Nashville
Byrd, J W Thomas, Nashville
Cadena-Cucta, Guillermo, Hermitage
Cage, John Bright, Nashville
Caldwell Jr, Benjamin H, Nashville
* Calhoun, Calvin Lee, Nashville
* Callaway, James J, Nashville
Callaway, Michael Denney, Nashville
Callaway, Thomas Haile, Nashville
Campa III, John A, Nashville
Campbell, Susan B, Nashville
Campbell, Thomas W, Nashville
Campbell, W Barton, Nashville
Canale Jr, Daniel D, Nashville
* Cannon II, Richard O, Nashville
Cannon Jr, Charles Grady, Nashville
Cantrell, Stephen B, Basking Ridge, NJ
* Card, William Judson, Madison
Carlsen, Andrew B, Nashville
Carlson, Brian Richard, Mount Juliet
* Carney Jr, Sam W, Madison
Carr, Mark Barham, Nashville
Carter, Jeffrey B, Nashville
* Carter, Oscar Willis, Nashville
Cartwright, Pete S, Nashville
* Cassell, Norman M, Nashville
Castelnuovo-Tedesco, P, Nashville
Cate, Ronald C, Nashville
Cato, James Robert, Nashville
* Cazort, Ralph J, Nashville
* Chalfant, Robert L, Nashville
Chambers, Jill F, Nashville
Chang, Pong Moon, Nashville
Chapman, John Edmon, Nashville
Charles, Philip David, Nashville
Chatterjee, Molly S, Nashville
Chazen, Eric Martin, Nashville
Cheij, Abraham Pacha, Nashville
Chenger, Joseph D, Nashville
Chern, Andrew Lawson, Nashville
Chern, Kenneth Y, Nashville
Chisolm Jr, Joe M, Nashville
Christenberry, Robert H, Nashville
Christofersen, Mark R, Nashville
Churchwell, Andre L, Nashville
Classen, Jeannine Archer, Madison
Clendenin III, Robert, Brentwood
Clinton, Mary E, Nashville
* Cobb Jr, Cully A, Nashville
Cochran, Robert Taylor, Nashville
Cohen, Alan Gary, Nashville
Coker, Wesley Louis, Nashville
Coleman Jr, John R, Nashville
Coleman, James Jackson, Nashville
Coleman, Paul Houston, Nashville
* Coles III, John H, Nashville
- Collier III, Anderson Burton, Nashville
Collins, Robert S, Madison
Coltharp, William H, Nashville
Concepcion, Raoul S, Nashville
Connor, Dan E, Madison
Conrad, James Francis, Nashville
Cooke, George Edward, Nashville
Cooper, Robert S, Nashville
* Corbin Jr, Charles, Nashville
- Corvera, Joel Samson, Nashville
* Cothren, Frederec B, Chattanooga
Cothren, Jackson Daniel, Nashville
Cotton Jr, Robert Bell, Nashville
* Couch Jr, Orrie A, Nashville
Couden, Vincent Robert, Hermitage
Coulam, Craig M, Nashville
Cowan, Hanson B, Nashville
Cowden, Charles Marshall, Hendersonville
* Cowden, Frederic Eugene, Nashville
Crabtree, Yvette Guislain, Nashville
* Crafton, George B, Nashville
Crafton, George West, Madison
Crane, Joseph Michael, Madison
* Crane, Paul Shields, Old Hickory
Crawford Jr, Walter Morgan, Nashville
Creech, Robert H, Hermitage
Crenshaw, Marshall H, Nashville
Crook Jr, Jerrall Paul, Nashville
Crook, Angus M G, Nashville
Crook, Jerrall Paul, Nashville
Cross, David L, Nashville
Crowder Jr, Robert Alford, Nashville
- Crowne, Patrick Cooksey, Nashville
Crumbo, Donald S, Hermitage
Crutchfield, J Stuart, Nashville
Cushman, Arthur Robert, Madison
D'Amico, Stephen J, Nashville
Dalton, John Charles, Nashville
Daniell, James F, Nashville
Dao, Anh Huu, Nashville
* Darby, William Jefferson, Thompson Station
Dash, Lamarr A, Franklin
Daugherty, Paul S, Hendersonville
* Daugherty, Philip V, Rockmart, GA
Davis Arnold, Evelyn J, Brentwood
Davis Jr, Thomas Joel, Nashville
Davis, Ben Weldon, Nashville
Davis, Carla Suzanne M, Nashville
Davis, G William, Nashville
Davis, Ivan R, Nashville
Davis, J Lucian, Nashville
* Davis, Michael David, Nashville
Davis, Richard John, Nashville
Davis, William Gray, Madison
Day, T Wayne, Nashville
DeLozier III, Joseph B, Nashville
DeLozier, Jan S, Nashville
Deason, Deborah R, Nashville
Deaton, Mark Arey, Nashville
Decker, Michael Donahue, Nashville
* Delvaux Jr, Thomas C, Nashville
- Derring, Timothy A Mical, Nashville
Dillard Jr, Samuel Henry, Brentwood
Dimick, Robert Marshall, Nashville
Dittus, Janet L, Franklin
Dixon, Bryce William, Nashville
Doak, William Melville, Donelson
Doering, Tracey Ellen, Nashville
Donovan, Kevin L, Nashville
Dopp, Alan C, Nashville
* Doss, W Gordon, Hendersonville
Doster Jr, Robert T, Nashville
Douglas-Churchwell, Leslie Diane, Nashville
Dow III, Frederick Thompson, Nashville
Downey, William Lee, Nashville
Downs, Nevin Howard, Hendersonville
Doyle, Deborah R, Nashville
Dozier Jr, J Emmett, Nashville

Dozier, Kenneth C, Hendersonville
Draud, Jon Winston, Nashville
* Driver Jr, L Rowe, Nashville
Droughn, Jeffrey D, Nashville
* Dubuisson, Ray L, Nashville
Dudley, B Stephens, Nashville
Duffy, Karen Barr, Madison
Dunbar, Laura L, Nashville
Duncan, Gary William, Nashville
* Duncan, George E, Nashville
Duncan, Thomas C, Nashville
Dundon, Mary Catherine, Goodlettsville
Dunkerley Jr, Robert C, Nashville
Dunn Jr, B Rentz, Nashville
Dunn, David B, Hermitage
Dunn, George Dewey, Nashville
Dunn, Melanie, Nashville
Dutton, William Patterson, Hermitage
Dyer, David N, Nashville
Dyer, Eric L, Nashville
Earthman, Webb Johnston, Nashville
Ebert, Michael H, Nashville
Eckstein, Charles W, Nashville
Edwards Jr, William H, Nashville
Edwards, Joe Michael, Nashville
Edwards, Michael Ernest, Brentwood
Edwards, Robert Harvey, Nashville
Edwards Sr, William H, Nashville
Eisert, Donald Ramon, Nashville
Elam III, Roy Oscar, Nashville
Elam, Lloyd Charles, Nashville
Elliott, James H, Nashville
Ellis, Darrel L, Nashville
* Ellis, James W, Nashville
Ellis, Michael C, Madison
Elrod, Burton F, Nashville
Elrod, James T, Hermitage
Emerson Jr, Charles W, Nashville
Emerson, Clifton W, Nashville
Emerson, Edwin Boyette, Nashville
Emfinger, C Wesley, Nashville
Ensalada, Leon H, Nashville
Entman, Stephen S, Nashville
Escobar, Alfonso, Hermitage
Eskind, Irwin Bernard, Nashville
Eskind, Jeffery Bein, Nashville
Eskind, Steven J, Nashville
Estes, Robert L, Nashville
Estopinal, Marcel R, Nashville
* Evans, Hillis Floren, Madison
Evans, Janet E, Old Hickory
Evans, Jonathan G W, Madison
Evers, Elizabeth Ann, Nashville
* Ewers, E William, Nashville
* Eyler, Don L, Salem, AL
Ezell, Gilbert D, Hermitage
Ezell, Meredith A, Hermitage
Ezell, Roy Clay, Hermitage
Faber, Robert Branch, Nashville
- Fagan, E Blake, Nashville
Fanning, John Elliott, Nashville
Farrar, William Taylor, Nashville
Fassler, Cheryl Ann, Nashville
Faulk Jr, Wallace H, Nashville
Faulkner, Charles Taylor, Nashville
Faust, Thomas Wilson, Nashville
Felch, James W, Franklin
Felts, Stephen Karey, Nashville
Feman, Stephen S, Nashville
Fenichel, Gerald Mervin, Nashville
Ferguson, Harold Austin, Nashville
Ferrell III, Claude Lee, Nashville
Fields, James P, Nashville
Fields, John Pershing, Nashville
Finch, William Tyree, Nashville
Finke, Frederick Leroy, Nashville
* Fishbein, Joseph H, Nashville
* Fisher, Benjamin, Nashville
Fisher, Jack, Nashville
Fleet III, William Floyd, Nashville
Fleet Jr, William F, Goodlettsville
Fleischer, Arthur C, Nashville
Fleming Jr, James H, Nashville
Fleming Jr, Ross, Nashville
Fleming, Philip Edward, Nashville
Fletcher, Christopher W, Nashville
Fletcher, Suzanne M, Brentwood
Flexner, John Morris, Nashville
Flora, Mark Dudley, Nashville
Ford, Dianne J, Madison
Foster, Henry Wendell, Nashville
Foster, Nelson Ray, Nashville
Fowinkle, Eugene Wesley, Nashville
Fox, G Albert, Nashville
Francis, Robert Stanley, Nashville
Franke, Jenny J, Nashville
Franklin, Jerry M, Nashville
Frederiksen, Rand Terrell, Nashville
- Freeman, John Paul, Hermitage
Freeman, Mark Pearce, Brentwood
Freeman, Rufus Jack, Nashville
Frenchman, Khushru H, Hendersonville
Frexes-Steed, Maria E, Nashville
Frey, Walter Willis, Nashville
Friddell, Thomas James, Nashville
Friedman, Wallace L, Nashville
Frist Jr, John C, Nashville
Frist, William Harrison, Washington, DC
* Frist Sr, Thomas F, Nashville
Fry, James Alan, Nashville
* Furlow, William Loomis, Nashville
Gaines, Donald Lee, Hermitage
Gaither, Douglas Hamilton, Nashville
- Galbraith, Clark H, Franklin
* Gant, Julian C, Loma Linda, CA
* Gardner, Charles Kurtin, Nashville
Garman, Richard W, Brentwood
* Garrett, Sam Young, Nashville
Garside Jr, William Blake, Nashville
Gaskin III, Hubert Samuel, Brentwood
* Gaskins, Fay M, Nashville
* Gaston, Robert B, Donelson
Gaume, James Alan, Nashville
Gavigan, William Mitchel, Nashville
Gaw, David Wisdom, Nashville
* Gaw, William Richard, Nashville
Geddie, Daniel Clark, Nashville
Geer, Richard John, Nashville
Genca, Erol, Nashville
Gentry, Harold Leffel, Madison
George, Diane Thompson, Nashville
German, Deborah C, Nashville
Gibson, John Ragan, Nashville
Gill, Charles McClelland, Nashville
Gilmer, Ronald K, Nashville
Gingrass, Mary Katherine, Springfield
Ginn, H Earl, Nashville
Glascock, Frank B, Nashville
Glasscock, Michael E, Nashville
Glassford Jr, David M, Nashville
Glazer, Mark D, Nashville
* Glover Jr, John P, Nashville
Gluck Jr, Francis W, Nashville
* Gobbell Jr, Walter G, Nashville
Gold, Michael H, Nashville
Goldberg, David S, Nashville
Goldfarb, Mark S, Nashville
Goldner Jr, Fred, Nashville
* Gomez, Paul Charles, Franklin
Goodman, Bruce Randolph, Hermitage
Goodman, William M, Madison
Gore, Johnny Elmo, Antioch
Gotterer, Gerald S, Nashville
Gowda, Hiranya C K, Hermitage
Graber, Alan Lee, Nashville
* Graham Jr, Louis S, Sebastian, FL
Graham Jr, Robert P, Nashville
Graham, Steven Donald, Nashville
Graham, Thomas P, Nashville
Granda, Antonio Medardo, Nashville
Grant, Burton Paine, Nashville
* Graves Jr, Herschel A, Nashville
Gray Jr, James Ronald, Nashville
Gray, George F, Nashville
Gray, Roland William, Nashville
* Greco, Barbara A, Brentwood
Greco, Frank Anthony, Nashville
* Green Jr, Paul A, Nashville
Green, James Donald, Nashville
* Green, Louis D, Brentwood
Green, Neil Edward, Nashville
Greenbaum, Ralph Martin, Nashville
Greer, John Pettry, Nashville
Gregory II, James P, Nashville
Gregory Jr, Marvin Geer, Nashville
Gremillion Jr, Daniel E, Nashville
Griffin, John Joseph, Nashville
Grimes, Elwyn Mancel, Nashville
Griner, Winston H, Nashville
Griscom, John Hooper, Nashville
Groos Jr, Erich Bryan, Nashville
Groos, Erich Bryan, Nashville
* Grossman, Laurence A, Nashville
Grove, R Barry, Brentwood
Growdon Jr, James Harold, Nashville
Guenst, John Martin, St Louis, MO
Guillermin, John Philip, Hermitage
Gunn, Michael G, Nashville
Gurley, Larry D, Nashville
Gutow, Gary Samuel, Nashville
* Gutow, Richard Fineman, Nashville
- Haase, David H, Nashville
Hagan, George Bryant, Madison
Hagan, Keith W, Nashville
Hagan, Kevin F, Nashville
Hagenau, Curtis James, Nashville
* Haines Jr, Charles Edgar, Nashville
Hainsworth, John D, Nashville
Haley Jr, Robert Leo, Madison
Hall Jr, Wallace Howard, Nashville
Hall, Hugh David, Nashville
* Haltom, Thomas Branson, Nashville
Hamburger, Norman J, Brentwood
* Hamilton, James Richard, Nashville
* Hamilton, William M, Highlands, NC
* Hammonds, Roy Glenn, Nashville
Hampf, Carl R, Nashville
Handte, Robert E, Brentwood
Hanes, Thomas Eugene, Madison
Hannah, Gene Allen, Nashville
* Hansen, Axel Carl, Nashville
Hardin, Robert Allen, Nashville
Hargreaves, Ray, Nashville
* Harowitz, Alexander Earle, Murfreesboro
Harper, Marion Cal, Nashville
Harris, Gamal Allob, Nashville
* Harris, Jackson, Nashville
Harris, Perry Felton, Nashville
Hart, James Robert, Nashville
Hartness, William Owen, Nashville
Harwell Jr, William Beasley, Nashville
* Harwell, Aubrey B, Nashville
Hausmann, Jan M, Nashville
Hawkins, Rowland Speck, Nashville
Hayes, Andrea Lynn, Nashville
* Hayes, James T, Nashville
Haynes Jr, J Brevard, Nashville
Haynes, James Hugh, Nashville
* Haynie, H Campbell, Nashville
Hays, James William, Nashville
Hays, Michael W, Nashville
Heflin, A Clyde, Nashville
Heil, Paul Jacob, Nashville
Heim, Craig Reed, Nashville
Heitz, Julian C, Nashville
Helderman, J Harold, Nashville
Heller, Richard Moss, Nashville
* Helme, James B, Nashville
Helton, Stephen Lane, Brentwood
Henderson, Anita Shaunak, Goodlettsville
Henderson, James Porter, Nashville
Henderson, Robert R, Nashville
Henry, Douglas C, Nashville
Henson, Alan Stuart, Hendersonville
Herring Jr, Robert William, Brentwood
Herring, Jeffrey L, Nashville
* Herrington Jr, John L, Nashville
* Herzfeld, John G, Nashville
Hester, Ray Willis, Nashville
Heyman, Stephen Joel, Nashville
High, James Marshall, Madison
Hightower, Daniel Russell, Nashville
Hill, Christopher C, Nashville
Hill, David Edwin, Nashville
Hill, George Alan, Nashville
Hill, Warren Thomas, Hendersonville
Hill, William Harold, Madison
* Hillard, Irving Ringo, Hermitage
Hines, Stephen L, Nashville
Hinton, Alice A, Nashville
Hirsch, M Bruce, Nashville
Hitchman, James Kenneth, Hendersonville
* Hobdy, Charlie Joe, Nashville
Holbrook, James Trent, Nashville
Holcomb III, George W, Nashville
* Holcomb Jr, George W, Nashville
Holcomb, Timothy Owen, Mount Juliet
* Hollender, Marc Hale, Nashville
Holliday, Hugh Douglas, Nashville
Hollinger, Bruce, Nashville
Holmes III, George Landis, Nashville
Holzen, Thomas W, Nashville
Hood, Rob Reid, Nashville
Hoos, Richard T, Nashville
Hopp, Stanley G, Nashville
Hopper, J Brian, Nashville
Horn, Robert Gordon, Nashville
Horowitz, David Harvey, Nashville
Horton Jr, Frederick T, Nashville
* Horton, Bennett Franklin, Knoxville
Houston, Mark Clarence, Nashville
Howell Jr, Everette Irl, Nashville
Howerton, Henry Clayton, Nashville
Howerton, Richard Allen, Nashville
Hsueh, Yerng Terng, Nashville
Huber, Thomas J, Hendersonville
* Hudgins, James M, Nashville
Huff, John Gregory, Nashville
Hughes, William Henry, Brentwood
Humphrey, Stephen P, Madison
Humphreys, Jerry Kay, Hermitage
Hurt, Joseph Edward, Nashville
Huston, Joseph W, Nashville
* Hutton Jr, Vernon, Nashville
Hutton, Robert M, Nashville
Hyman, Steve A, Madison
Hymes, Jeffrey Lawrence, Nashville
Ikard, Robert Winston, Nashville
Ikejiani, Afam C, Nashville
* Isenhour Jr, Albert P, Nashville
Ismail, Muhammad Sami, Nashville
* Ivie, Joseph McKinney, Nashville
Jack, Robert Allen, Nashville
Jackson, C Gary, Nashville
Jackson, Roger Theodore, Nashville
Jacobi, Susan M, Nashville
Jacobs, Joseph Kenneth, Nashville
Jacobson, Ned R, Nashville
Jamieson, Robert C, Nashville
Jamison Jr, Dale H, Nashville
Janes, Cynthia A, Nashville
Jao, Henry C, Madison
Jarvis, David Alan, Nashville
Jeanty, Philippe, Nashville
Jennings, Henry S, Nashville
Jerkins, Gary W, Nashville
Jerkins, Terri Wood, Nashville
John Jr, James Thomas, Nashville
Johns, Karla J, Nashville
Johnson Jr, Benjamin Wilbur, Nashville
* Johnson Jr, Ira T, Nashville
Johnson, David Horton, Nashville
Johnson, Harry Keith, Nashville
* Johnson, James William, Nashville
Johnson, John Settle, Nashville
Johnson, Mark Lanier, Nashville
Johnson, Robert Marshall, Nashville
Johnston, Robert K, Nashville
Johnston, William D, Nashville
Jones III, Howard W, Nashville
* Jones, Claudia K, Nashville
Jones, David Nando, Nashville
Jones, David Scott, Nashville
* Jones, Edmund Palmer, Nashville
Jones, Frank Emerson, Nashville
Jones, James Donald, Nashville
Jones, John Donald, Brentwood
Jones, Phillip R, Nashville
Joos, Karen Margaret, Nashville
* Jordan, Thomas Malone, Nashville
Joy, Roger C, Nashville
Juliao, Saul A, Brentwood
Kaiser, Allen B, Nashville
Kambam, Jayakumar Reddy, Nashville
Kaminski, Michael James, Nashville
Kaplan, Herman Jacob, Nashville
Kaplan, Peter Robert, Nashville
Karpos, Philip A G, Nashville
* Karzon, David Theodore, Nashville
Kasselberg, Alfred Guy, Nashville
Kaufman, Alan Joel, Nashville
Keane, William Sherman, Nashville
Kemper, Craig M, Nashville
Kendrick, Will Davis, Nashville

* Kennedy, J Allen, Nashville
Kenner III, William Davis, Nashville
* Kennon Jr, William G, Nashville
Keown, Mary Elizabeth, Nashville
Keyser III, John Edward, Nashville
Khan, Qamar Ali, Nashville
Kidd, Jennifer Kay, Nashville
Killman, Kathryn, Nashville
Kilroy, Anthony Waldo, Nashville
Kimbrell Jr, Fred Taylor, Donelson
King Jr, Lloyd E, Nashville
King, Jeffrey L, Nashville
Kinney, Steven R, Nashville
Kirchner Jr, Frederick K, Nashville
Kirchner, Sandra Lynne G, Nashville
Kirshner, Howard S, Nashville
Knapp, David S, Hendersonville
Knoll, L Dean, Nashville
Koch, Michael O, Nashville
* Kochtitzky, Otto M, Nashville
* Koenig, Leonard J, Nashville
Kondis, Deborah Jean, Nashville
Kourany, Ronald Frederic, Nashville
* Kramer, Lee F, Madison
Kreegel, Drew A, Hermitage
Kurtz, Bryan R, Nashville
Kuzur, Michel Elias, Madison
Kyger, Kent, Nashville
Kyser, James Gregory, Nashville
LaNeve, Ralph James, Hermitage
* LaVoi, Samuel Joseph, Nashville
Lacrampe, Marc J, Nashville
Lamar, Ruth Elaine, Nashville
Lamb, John William, Nashville
* Lamb, Roland D, Nashville
Lamballe, Adrian K, Nashville
Lancaster, Lifford Lee, Madison
Lanford, Gregory Bryan, Nashville
Langley, Melissa, Nashville
Latour, Dana L, Franklin
Latour, Paul A, Nashville
Laughlin, Lawrence Paul, Nashville
* Lavely Jr, Horace T, Nashville
* Lawrence Jr, Granville A, Nashville
Lawrence, Jeffrey P, Nashville
Laws, Kenneth Howard, Nashville
* Lawson, Albert Robert, Nashville
Layton, Brent Thomas, Nashville
LeBleu, Todd Howle, Nashville
* LeQuire, Virgil S, Nashville
Lea IV, John W, Nashville
Lea, Clark D, Nashville
Leavell, Sandra Reese, Nashville
Ledbetter, William Henry, Nashville
Lee, David Granville, Nashville
Lee, Stanley M, Nashville
Lee, Sue J, Hermitage
Lee, Thomas Warren, Nashville
Leeper, H Brian, Brentwood
Lefkowitz, Lewis B, Nashville
Leftwich, Russell B, Nashville
Lentz, Joseph Francis, Nashville
Leonard, John Martin, Nashville
* Lester, James Peyton, Old Hickory
Levine, Jon Howard, Nashville
Levitt, Michael J, Nashville
* Lewis, Malcolm R, Nashville
Lewis, Michael Martin, Nashville
Lewis, William I, Nashville
Lieberman, Scott Howard, Nashville
Light, Richard T, Nashville
* Lilly, Edwin Jacob, Nashville
Limbird, Thomas J, Nashville
Link, John Louis, Nashville
* Linn, Joanne Lovell, Nashville
* Lipscomb, Albert Brant, Nashville
Lipson, Paul Jay, Nashville
Lisella, Richard Scott, Nashville
Lloyd, Kenneth Michael, Nashville
Long, Lana L, Nashville
Long, Ruth Barron, Nashville
Long, Wendy Jo, Nashville
Long, William Royston, Nashville
Loveless Jr, James Alva, Hermitage
Lovvorn Jr, Harold N, Nashville
Lowe, Whitson, Nashville
Lubow, Lawrence D, Hendersonville
Lundin, Linda S, Nashville
* Lyle, Philip Lewis, Clarksville
Lynch, John Brown, Nashville
MacMillan Jr, Charles W, Nashville
MacMillan, Robert Duncan, Nashville
Macey Jr, John W, Nashville
Mack Jr, Harry Russell, Nashville
Madden Jr, James Joseph, Nashville
Magee, Michael J, Nashville
Mahler, D Mark, Nashville
Mallard, Robert Elwood, Nashville
Manalac Sr, Abelardo Z, Mount Juliet
Marney, Samuel Rowe, Nashville
Martin III, Raymond S, Nashville
Martin, Richard B, Nashville
Martinez, Rogelio R, Nashville
Massie, Ralph W, Nashville
Maxwell, G Patrick, Nashville
Mayeaux, Carl Anthony, Nashville
Mayes, Charles Eugene, Nashville
Mayorquin, Francisco Javier, Nashville
McAlister, Aileen Hood, Nashville
McAndrew, Mark Phillip, Nashville
* McCall, Herbert Travis, Franklin
* McClellan, Robert E, Nashville
McCombs, Paul Raymond, Nashville
McConnell, Conn M, Madison
McCord, David Hughes, Nashville
* McCracken, Robert Lazear, Nashville
McDonald, Edward C, Nashville
* McGinnis, Charles W, Nashville
McHugh, Daniel Joseph, Nashville
McInnis, John Cameron, Nashville
McKay, Charles E, Nashville
McKee, David Earl, Madison
McKenna, Samuel Jay, Nashville
McLeod, Alexander C, Nashville
* McMurray, M Charles, Nashville
McNabb, Paul Carter, Nashville
* McPherson, Ewing William, Nashville
McRae, John Radford, Nashville
Meacham, Patrick W, Nashville
* Meacham, William Feland, Nashville
Meador, Clifton K, Nashville
Meadors III, Marvin Porter, Nashville
Meadors, Michael H, Nashville
Melkin, Stephen Pellar, Nashville
Meluch, Anthony A, Nashville
Mencio, Gregory A, Nashville
Mendoza, Daniel, Hendersonville
Menzie, James W, Nashville
Merrill, Walter Hilson, Nashville
Merritt II, Cullen R, Nashville
Meyer Jr, Alvin Henry, Hermitage
Meyers, Laura L, Nashville
Michael, Paul R, Nashville
- Milam IV, R Alden, Nashville
Milam, Douglas F, Nashville
Milek, Michael A, Nashville
Miller Jr, James Olney, Madison
* Miller, Andrew Herron, Nashville
Miller, Bonnie Mersky, Nashville
* Miller, Joe M, Nashville
Miller, John M, Nashville
Miller, Michael E, Franklin
Miller, Michael Peter, Nashville
Miller, Robert F, Nashville
Millis, James Brown, Nashville
Min, Marcus M, Brentwood
Minch, F Michael, Nashville
* Minton, Lee Roy, Nashville
Miranda, Fernando T, Nashville
Mishu, Dina Hanna, Goodlettsville
Mitchell, Carl Edward, Nashville
Mitchell, Douglas Park, Nashville
Mitchell, Larry M, Franklin
Mitchell, Michael Thomas, Nashville
Mitchell, Thomas R, Nashville
Mixon, James Christopher, Brentwood
Montesi, Scott Anthony, Nashville
- Montgomery, Lee, Nashville
Montgomery, Marcia A, Nashville
Moore, George W, Nashville
Moore, James N, Nashville
Moore, John Reagan, Nashville
Moore, Walton Louis, Brentwood
Moran, Houston, Nashville
Moredock, Gerald Michael, Nashville
Morehead, V Tupper, Nashville
Morgan III, Walter McNairy, Nashville
Morgan, Susan Lynn, Antioch
Moroney, David M, Nashville
Morris Jr, John A, Nashville
Morrow, Jason Drew, Nashville
Morton III, Charles E, Nashville
Moss III, Charles Albert, Brentwood
Moulton, Patrick Howard, Nashville
Moyers, James Richard, Nashville
Mulherin Jr, Joseph Louis, Nashville
Murphy, Patrick Brian, Nashville
Murphy, Susan Alice, Nashville
Murray Jr, Robert C, Nashville
Nadeau, John Hugh, Nashville
Nading, John Henry, Nashville
- Naoum, Joseph J, Nashville
Neaderthal, Robert Lee, Nashville
Neblett III, Wallace W, Nashville
Neff, Betty K, Nashville
Nelson, Loren Douglas, Orlando, FL
* Nemec, Dewey G, Nashville
Nesbitt Jr, Thomas E, Nashville
* Nesbitt, Tom Edward, Nashville
* Netsky, Martin George, Atlantic Beach, FL
Netterville Jr, John T, Brentwood
- Newman, Martin, Nashville
Newsome III, H Clay, Nashville
Ng, Christopher C, Nashville
Nichols, Daryl L, Nashville
Niedermeyer, Michael E, Nashville
Norris, Margaret Swann, Nashville
Norton, Charles Glenn, Nashville
Norton, Douglas Edward, Nashville
Nunn, Paula S, Nashville
Nylander, Barbara Hartkop, Nashville
Nylander, William Arthur, Nashville
O'Brien, Kevin Michael, Brentwood
O'Brien, Lee Anne Faulkner, Brentwood
O'Day, Denis Michael, Nashville
Oakley, Jennifer Lynne, Nashville
Oates, John Alexander, Nashville
Odom II, Harrell, Nashville
Oglesby, John Wills, Nashville
Okeke, Obianuju C, Nashville
Oldfield, Elizabeth L, Nashville
Oldham, Richard Randolph, Nashville
Ollapally, Elsie P, Nashville
Olsen, Douglas Ole, Nashville
Olson, Barbara Jean, Nashville
Orcutt, Thomas William, Nashville
Orland, Richard A, Nashville
Orth, David N, Nashville
Ossoff, Robert H, Nashville
Overfield, Ronald E, Nashville
Owens, Julie Lynne, Hermitage
* Ownbey, Richard Phillip, Nashville
P'Pool Jr, Bruce, Nashville
Page Jr, Harry L, Nashville
Page, David Lee, Nashville
Pagnani, Michael Joseph, Nashville
Pardue, Chris C, Nashville
Paris, Trevor Hambling, Madison
* Parker, Roy W, Nashville
Parris, Winston Clive Vic, Nashville
Parrish, Carolyn M, Nashville
* Parrish, Thomas Franklin, Nashville
Partain, C Leon, Nashville
Pasipanodya, Alphonse, Nashville
* Pass, Bernard J, Deerfield Beach, FL
Pass, Lawrence J, Madison
Pate, John Kirby, Nashville
Patikas, Takis, Nashville
Patten, W Thomas, Goodlettsville
Patterson, Arthur Knox, Nashville
Patterson, Warren R, Nashville
Paviglianiti, Joseph Carmine, Brentwood
Payne, William Faxon, Nashville
Pecache, Conchita T, Madison
Pedigo, Thurman Lee, Nashville
Peek, Julie Thomas, Nashville
* Peerman Jr, Charles G, Nashville
* Peery Jr, Clarence E, Nashville
Pelerossi, Mark Francis, Nashville
Penley, William Charles, Nashville
Pennington Jr, Jefferson, Nashville
Pennington, Thomas G, Nashville
Perales, Maria Isabel, Nashville
Perales, Pedro Juan, Hermitage
* Perler, George L, Nashville
Perlman, Stewart Neal, Nashville
Perry Jr, Frank A, Nashville
Perry Jr, James Murray, Madison
Perry, Stephanie Mouton, Nashville
Perry, Stephanie White, Nashville
Petcu, David J, Nashville
Peters, John Edward, Nashville
Petracek, Michael Ray, Nashville
Petrie, William M, Nashville
Pettit, William Albert, Goodlettsville
* Pettus Jr, Robert L, Madison
Pettus, William Harold, Nashville
Phillips, Daniel L, Nashville
* Phythyon, James Martin, Nashville
* Pickens Jr, David R, Nashville
Pierce Jr, Edgar H, Nashville
Pierce, Elizabeth P, Goodlettsville
Pierce, Vinton Douglas, Hermitage
Pietsch, John B, Nashville
Pilkinton Jr, Robert Dale, Nashville
Pilkinton, Robert Dale, Madison
Pinson, Richard D, Nashville
Piper, Sharon Marie, Nashville
Poag, Kenneth Leslie, Nashville
Pomeroy, Howard Clifton, Nashville
Porch III, Phillip P, Nashville
Porter III, Lester L, Nashville
Potanin, Constantine, Nashville
* Potts, Thomas Edward, Nashville
Powers, James S, Nashville
Prakash, Rudra, Brentwood
Pratt, Stephen M, Nashville
Presley, Richard Eldon, Nashville
- Preston, William A, Nashville
Pribor, Hugo C, Nashville
Price, Ann Hutcheson, Nashville
Price, James Sterling, Nashville
Price, John Duncan, Nashville
Price, Neil M, Nashville
Priest II, Edward M, Nashville
Pruitt, Ronald E, Nashville
Putnam, Karen Lowry, Nashville
* Quimby Jr, Charles Willis, Franklin
Quinn, Robert S, Nashville
* Quinn, Robert W, Nashville
Quisling, Richard W, Hermitage
Raefsky, Eric Lee, Nashville
Rainey, Richard Epes, Goodlettsville
Raja, K M, Nashville
Ralph Jr, William Bennett, Nashville
Ramos, Andres A, Nashville
Ramsey, James Albert, Brentwood
* Ramsey, Lloyd H, Nashville
Rao, Babu V, Nashville
Ray, Wesley Clark, Antioch
Reddy, Churku Mohan, Nashville
Reddy, Tanuja, Nashville
Reed, Michael Christopher, Nashville
Regan, Judith J, Nashville
Regen Jr, Eugene M, Nashville
Reid, Michael L, Hermitage
Rembert, Francis Marion, Nashville
Renfro Jr, Roy James, Nashville
Renfro, Roy James, Nashville
Reynolds, Vernon Harry, Nashville
* Ribeiro, Lenor De Sa, Nashville
Rice, Jack O, Nashville
Rice, Ronnie Neal, Hendersonville
Richards, Bruce Earle, Nashville
* Richards, James P, Nashville
Richards, Sherrie Anderson, Nashville
- Richardson, Kelly Bowden, Nashville
Richie, Robert Eugene, Nashville
* Ricketson, Robert A G, Nashville
* Riddell, Douglas H, Nashville
Riedel, Robert David, Nashville
Ries, William Russell, Nashville
Riestra, Jorge Casanova, Nashville
Ripley, Robert C, Nashville
Rivas, Alejandro A, Old Hickory
Robbins II, Lansdon B, Nashville
Robertson, Randolph H, Nashville
Robinette Jr, Charles L, Nashville
Robinson Jr, Nathaniel David, Indianapolis, IN
Robinson, Patricia, Nashville
Robinson, Robert Willard, Nashville
Robinson, Roscoe R, Nashville
Rocco, Vito K, Nashville
Rochester, Richard Earle, Brentwood

Rodes II, W Dyer, Nashville
Rodriquez, R Michael, Nashville
Rogers, Judson E, Nashville
Rogers, Karl Malone, Nashville
Rosen, Barrett Frank, Nashville
Rosen, Howard E, Nashville
Rosenblatt, Paul Allen, Nashville
Rosenblum, Howard H, Nashville
* Rosenblum, Marvin Jonas, Nashville
* Rosenblum, Solomon A, Nashville
* Rosenfeld, Louis, Nashville
Rosenthal, Philip, Hermitage
Ross, Joseph C, Nashville
* Ross, Peirce M, Nashville
Rowe, David M, Nashville
* Roy, Robert M, Nashville
* Ruark, Deborah S, Old Hickory
Rubinowicz, Richard, Nashville
Rummel, David Mark, Nashville
Runyon-Hass, Arthur, Nashville
Rush, Charles Bennet, Nashville
Russell, Robert Vance, Nashville
Rutherford, Edmund J, Nashville
Rutland, Craig D, Nashville
Rutledge, Samuel Benton, Nashville
Ryu, Chi Yol, Madison
Sacks, Glynis Ann, Nashville
* Sadler, Robert Neil, Nashville
Salcedo, Pepito Yapit, Nashville
Salyer, Howard Lee, Nashville
* Sampson, Louis, Nashville
Sanders III, Dan Sumner, Nashville
* Sanders Jr, Dan Sumner, Nashville
Sanders, Harvey Stanford, Nashville
Sanders, Mitchell Keith, Nashville
Sanders, Roy Quincey, Nashville
Sandidge, Robin Elizabeth, Nashville
Sanes Jr, Gilmore M, Hendersonville
Santi, Michael Thomas, Nashville
Santi, Stephen Farris, Nashville
* Sarratt, Madison H, Nashville
Satcher, Serena Maria, Oak Park, IL
Sator, Inocentes A, Old Hickory
Satterfield, Robert G, Hermitage
Sawyers, John L, Nashville
Sawyers, Julia Edwards, Nashville
Schaffner, William, Nashville
Schatz, Mary L Pullig, Brentwood
Schillig, Stephen, Nashville
Schlechter, Nicole L, Nashville
Schmidt, David M, Nashville
Schneider, Richard Paul, Nashville
Schoettle, Timothy P, Nashville
Schooley, William R, Nashville
* Schulman, Herbert J, Nashville
Schultenover, Stephen John, Nashville
Schultheiss, David Earl, Nashville
Schwaber, Mitchell Keith, Nashville
Schwartz, Jonathan Martin, Nashville
Schweikert, John Robert, Nashville
Schweikert, Nancie R, Nashville
Scobey, Joseph Wilburn, Madison
* Scott Jr, Henry William, Nashville
* Scoville Jr, Addison B, Sanibel, FL
Scoville Jr, George S, Nashville
Scudder, Donna Dugger, Nashville
Sears, Kenneth Lewis, Nashville
Seitz, Paul A, Nashville
* Sell, C Gordon, Nashville
* Sell, Sarah Hamilton, Nashville
Sergent, John Stanley, Nashville
Seshul, Michael Boyd, Nashville
Settle, Charles Sidney, Nashville
Sewell, Robert Alvin, Nashville
Shack, Robert Bruce, Nashville
Shackleford, E Conrad, Hendersonville
Shaff, Max I, Nashville
Shankle, Nelson Edward, Nashville
- Sharis, Christine Stoffel, Nashville
Sharp, Kenneth W, Nashville
Shearer, Cynthia Lee, Nashville
Shell Jr, William Alfred, Nashville
* Sheridan Jr, William F, Nashville
Sherman, Deborah D, Nashville
Shields, John Alfred, Nashville
Shivitz, Ira A, Nashville
Shmerling, Abram Carl, Nashville
Shofner, Robert Stewart, Nashville
* Shousha, Alfred, Nashville
- Showalter, Patrick, Nashville
Shull Jr, Harrison J, Nashville
* Shull, Harrison J, Nashville
Shultz, Thomas Francis, Nashville
Shuman, Todd A, Nashville
* Shupe, David Ralston W, Nashville
Siegel, Jane Meredith, Nashville
Siegel, Marc N, Nashville
Sikes, J Gregory, Nashville
Silbert, Burton, Nashville
Simpson, Lucien Caldwell, Nashville
Sims, Norman Le Master, Hendersonville
Singh, Alvin R, Murfreesboro
* Skinner, William, Nashville
Slaton, Paul Ernest, Nashville
Slonecker, William Thomas, Brentwood
Slovis, Corey M, Nashville
Smallwood, Geoffrey H, Nashville
Smith Jr, Grover R, Nashville
Smith, Bradley Edgerton, Nashville
* Smith, Charles Burnett, Nashville
Smith, Charles Ray, Nashville
Smith, David William, Nashville
Smith, Gary J, Nashville
Smith, Harold Patton, Nashville
Smith, Langdon G, Antioch
Smith, Murray Wilton, Nashville
Smith, Raphael Ford, Nashville
Smith, Russell R, Goodlettsville
Smith, Samuel A, Brentwood
Smith, William B, Hendersonville
Snell Jr, James D, Nashville
Snell, Barbara B, Nashville
Snow, S Steve, Nashville
* Snowden, Mary Ann R, Nashville
* Snyder, Howard Marc, Nashville
Snyder, Robert Bruce, Nashville
Snyder, Stanley Owen, Nashville
Sofranko, Joseph Edward, Madison
Somayaji, Buntwal N, Nashville
* Son, Choon Duck, Lyles
Soper, Brent Aleshire, Madison
Spalding, Michael Jon, Nashville
Spaw, Albert T, Nashville
Spengler, Dan M, Nashville
Sperring, Steven J, Nashville
Spickard, W Anderson, Nashville
Spigel, Stuart Charles, Nashville
* Sprofkin, Bertram E, Nashville
* Sprouse, Daphine, Nashville
Srinivas, Naveen, Hermitage
Stabile, Michael J, Nashville
Staggs, Stephen Michael, Brentwood
Stallworth, Catherine Robichaux, Nashville
Stallworth, Robert J, Nashville
Stanley, Christopher James, Madison
Starkey, Thomas D, Nashville
Starnes, Daniel L, Nashville
Steier, Jill, Hendersonville
Stein, Ira Edward, Nashville
Stein, Richard S, Nashville
Stein, Robert Elliot, Nashville
Stevens Jr, Frank W, Nashville
* Stevens, Frank Wilson, Nashville
Stewart III, William R C, Nashville
* Stewart, Lee William, Nashville
Stewart, Richard Baird, Nashville
Stolz, Margaret M, Nashville
Stone, Gertrude Oehmig, Nashville
Stone, William John, Nashville
Stoney Jr, William S, Nashville
Stouder, Dennis Alan, Nashville
Stowers, Stewart F, Nashville
Strange Jr, Glen J, Hermitage
Strayhorn III, William David, Nashville
Strickland, William Garrison, Nashville
Striepe, Volker, Nashville
Strimas, John Howard, Nashville
* Strode, Wilborn D, Nashville
Stroup, Steven L, Nashville
Strupp, John Allen, Nashville
Stubblefield, Mark Thomas, Franklin
Stumb, Paul Rust, Nashville
Sullivan, James N, Nashville
Sundell, Hakan Wilhelm, Nashville
Sunga-Guevara, Marietta, Madison
Susskind, Cynthia G, Nashville
Sussman, Craig Richard, Nashville
Swenson, Brian Robert, Nashville
Switter, David John, Nashville
Taber, David S, Nashville
Tacogue, Loyda C, Nashville
Tallent Jr, Marion B, Brentwood
Tannenbaum, Jerome S, Nashville
Tanner IV, Simpson Bobo, Nashville
* Tanner, John M, Nashville
* Tarpley, Edward Lewis, Nashville
Tate, Harry T, Madison
Tate, Steven M, Brentwood
Taylor, Dean Gates, Brentwood
Terry, Richard B, Nashville
* Teschan, Paul Erhard, Nashville
Tetzeli, John Paul, Nashville
* Thach Jr, Andrew Blaine, Nashville
- Thigpen, Michael Craig, Nashville
Thomas Jr, Clarence S, Nashville
Thomas, E Dewey, Nashville
Thomas, Jane M, Nashville
Thomas, Michael Carey, Hermitage
Thomas, Thomas C, Nashville
Thombs, David Dawson, Nashville
Thomison Jr, John B, Brentwood
* Thomison, John B, Nashville
Thomison, Rena M, Nashville
Thompson Jr, John G, Nashville
Thompson, Dana Shelton, Nashville
Thompson, Harold D, Brentwood
Thompson, Julia, Goodlettsville
Thompson, William Clark, Nashville
* Thorne, Charles B, Nashville
* Thornton, Spencer P, Nashville
Thurman, Grafton H, Madison
Thurman, Stephen S, Nashville
Ticaric, Stephen Theodore, Madison
Tilley, Kenneth Shannon, Nashville
Tipton, Edmund F, Nashville
* Tirrill III, Willard O, Nashville
Tishler, Steven David, Nashville
Titus III, William P, Nashville
* Todd Jr, Kirkland W, Nashville
Tomichek, Richard C, Nashville
Tompkins, Thomas E, Nashville
Toomey, Thomas Philip, Nashville
* Tosh, Robert H, Nashville
Townes, Alexander S, Nashville
Trabue, Anthony E, Nashville
* Traughber Jr, Leslie E, Nashville
Travis, Lawrence Warren, Nashville
Treadway, Charles Richard, Nashville
Triggs, Elizabeth Grimes, Nashville
Trochtenberg, David Scott, Nashville
Tucker Jr, Aubrey Lee, Nashville
* Tudor Jr, John M, Nashville
Tumen, Jon Jay, Nashville
Turner, Bruce Irwin, Nashville
Turner, Dorothy J, Nashville
Turner-Graham, Cynthia A, Nashville
Turpin, Buford Paul, Madison
Urbanek, Anthony P, Nashville
Uskavitch, David R, Nashville
VanBuren, David Howard, Nashville
Vandevender, Frank Karl, Nashville
Vanhooydonk, John E, Nashville
Vasquez, Jaime M, Nashville
Vincent, James L, Nashville
Vora, Pravinchandra Z, Nashville
Vosberg, Diane Marie, Nashville
Wadley, Fredia S, Nashville
Wadlington, William B, Nashville
Wagstrom, Lois, Nashville
Wahl, Robert Wilhelm, Nashville
Waldo, Douglas A, Nashville
Walker, Garry Verette, Nashville
Walpole Jr, Howard T, Nashville
Walwyn, Lloyd A, Madison
Ward Jr, James W, Madison
* Ward, Russell D, Nashville
Ware, Nancy Lynn, Nashville
Warner, John J, Nashville
Wasudev, Geeta Pramod, Nashville
Wasudev, Pramod B, Madison
Watson, Horace Eugene, Nashville
Watts, David Reed, Nashville
Wayburn Jr, Gates Jordan, Nashville
Weaver, Gregory R, Nashville
Webb, Roseanna Aileen, Nashville
Weil, Howard L, Hermitage
Weinberg, Jane Ruth, Nashville
Weindling, Steven M, Nashville
Weiss, Manuel Robert, Nashville
Weissinger, Mark Gerald, Nashville
Wells, Charles E, Nashville
Werkhaven, Jay A, Nashville
Werther, John Robert, Nashville
Wesley, Ralph E, Nashville
West, W Scott, Nashville
Wheeler, Arville Vance, Nashville
Wheeler, Paul W, Nashville
Wheeler, Thomas Chanley, Nashville
Wheelock, John B, Nashville
Whetsell Jr, William O, Nashville
Whit, James G, Hermitage
White, Houston Wayne, Nashville
White, Steven J, Nashville
Whitfield Jr, Thomas C, Brentwood
Whitfield, Jeff David, Nashville
Whitworth, Christine M, Nashville
Whitworth, Pat W, Nashville
Whitworth, Thomas Clayton, Nashville
Wilcox, Allen Brian, Nashville
* Wilkinson, Erle Ewing, Nashville
Will, Melissa A, Nashville
Williams Jr, W Carter, Nashville
Williams, Laura L, Nashville
Williams, Lester F, Nashville
Williard, Kenny F, Nashville
Willis, Larry Gale, Nashville
Wilson, James Phillip, Nashville
Wilson, Ronald E, Nashville
* Wilson, Wendell Winfred, Hermitage
Winek, David K, Nashville
* Witherspoon, Frank G, Nashville
Witherspoon, John D, Nashville
* Witthauer, Norman Everett, Nashville
* Witztum, Harry, San Diego, CA
Wolf, Bruce Lee, Nashville
Wolfe, Lawrence Kenneth, Nashville
* Wolfson, Sorrell Louis, St Petersburg Beach, FL
* Womack Jr, Frank C, Franklin
- Wongsurawal, Jon, Nashville
Wood, George Wallace, Nashville
* Woodcock Jr, Clarence C, Nashville
* Woodfin, Mose Clarke, Nashville
* Woods, John Robert, Ocala, FL
Wooten III, N Eric, Nashville
Workman III, Claude H, Nashville
Worthington, William B, Nashville
Wouters, Ben, Brentwood
Wray, Taylor M, Nashville
Wright, Doris Jacquelyn, Nashville
Wright, George D, Nashville
Wright, John Kelly, Nashville
Wyatt, Kenneth N, Hendersonville
Yarbrough, Barry Eugene, Nashville
Yarbrough, Mary Idyle, Nashville
Yates, David Robert, Hermitage
Ynares, Christina M, Nashville
Young, Larry Creston, Nashville
Youree, Cynthia C, Brentwood
Zellem, Ronald T, Madison
Zimmerman, Carl Wayne, Nashville

NORTHWEST TENNESSEE ACADEMY OF MEDICINE

Algee Jr, Wyatt R, Dyersburg
Allison, Jack R, Huntingdon
Ashley, Jon Stephen, Dyersburg
* Baird, Jesse P, Dyersburg
* Banks, Thomas V, Dyersburg
Batey, James Thomas, Union City
Beale, Hobart H, Martin
Blanton III, Marvin A, Union City
* Boston, Thomas E, Dyersburg
Bradberry, Sam W, Union City
Brown, Bruce B, Union City
Butler Jr, Arden Jones, Ripley
Butler, Harold Dee, Union City
Cameron, Robert Lynn, Union City
Cape, Richard C, Dyersburg
Carr, Kenneth, Martin
Caylor, Jim A, Dyersburg
Chu, Roy W, Dyersburg
Clendenin Jr, Robert E, Union City

Connell, Joseph D, Dyersburg
Cruthirds, Terry Park, Martin
Cummings, John M, Union City
David, Mary Stuart, Dyersburg
* David, Walter E, Dyersburg
Dubrule, Rosaire M, Newbern
Duncan, William Lloyd, Martin
Eason, William, Martin
Edwards-Davidson, Lesa Karen, Greenfield
* Freeman, Gordon R, Dyersburg
Gooch, Allen Christopher, Troy
Guthrie, David Porter, Dyersburg
Hale, John W, Union City
Harrington, Robert Lee, Dyersburg
Harris, Lee S, Dyersburg
Haynes Jr, Douglas B, Dyersburg
Heck, Michael J, Dyersburg
* Hill, Chesley Hester, Troy
Hill, Robert Paul, Troy
Hinds, Michael, Martin
Honaas, Trygve Olaf, Cape Girardeau, MO
Hopla, Anna Kristine, Martin
Huff, Carl Wayne, Martin
Hunt, Joe, Ripley
* Inclan, Aurelio Peter, Germantown
James, William Alex, Union City
Jernigan, Jerry Marshall, Dyersburg
Johnson, Eloiett, Dyersburg
Jones, David D, Martin
Joyner, Johnny Barry, Dyersburg
Kempton, Michael M, Martin
* Kerr, Robert Thompson, Dyersburg
Kimberlin, G Danny, Paris
King, Elton Aaron, Dyersburg
Lackey Jr, H Lebron, Dyersburg
Lawrence, Roy Finch, Union City
Legan, John M, Dyersburg
Lewis, Rodger Patrick, Union City
Looper, Fred B, Dyersburg
Lyerly, Donald Newton, Martin
Maloney, Kenneth Roscoe, Dyersburg
Marsidi, Paul, Union City
Martin, Betsy Harris, Dyersburg
McCracken, Ann Boozer, Union City
Melton, Stevens D, Dyersburg
Moore III, Fred, Dyersburg
* Moore, James Chalmers, Dyersburg
Mulay, Ramakant M, Dyersburg
Noonan, James Rothwell, Dyersburg
Patrick, Robert G, Martin
* Phillips, William Leroy, Newbern
* Porter, Nathan F, Greenfield
Ragsdale, James Howard, Union City
Reaves, John Andrew, Dyersburg
Reynolds, James Ralph, Dyersburg
Robbins, Billy Gerald, Halls
Sanner, Robert F, Union City
Schleifer III, Grover F, Union City
Shore, James William, Martin
* Smith Jr, O Kay, Martin
Smith, James Herman, Dyersburg
St Clair, David Smith, Union City
Swetnam, Jeffrey Allen, Dyersburg
Thompson, Thomas Reece, Dyersburg
* Thornton Jr, W I, Dyersburg
Tucker, William Henry, Ripley
Warner, Lynn Andrew, Dyersburg
* Webb, Claude Raymond, Ripley
Wolfe, James Hardy, Dyersburg
Wong, Luis, Ripley
Young Jr, Robert Roger, Union City

OVERTON COUNTY MEDICAL SOCIETY

Clements, Barton Matthew, Celina
Clough, John R, Livingston
Colburn, Kenneth Lee, Livingston
Cox, Michael Thomas, Livingston
Jones III, Albert A, Livingston
Mason, Larry, Livingston
Miller, Richard, Livingston
Quarles Jr, Will G, Livingston
* Roe, Jack Michael, Livingston
Smith, C Gray, Monterey
Smith, Trueman David, Livingston

PUTNAM COUNTY MEDICAL SOCIETY

Adams, Robert Ralph, Cookeville
* Artress, F Lynn, Cookeville
Barnard Jr, Vaughn N, Cookeville
Barnes, Sam Taylor, Cookeville
Bertram, Katherine Alice, Cookeville
Bertram, Philip, Cookeville
Bremer, Joyce Faye, Cookeville
Breyer, James L, Cookeville
Bush, Gladys A, Lebanon
Case, R Alex, Cookeville
* Chapin, Frederick J, Cookeville
Coonce, Daniel F, Cookeville
Copeland, Scott A, Cookeville
Crosier, Jefferson Ward, Cookeville
* DeBerry, James T, Cookeville
Derryberry, Walter E, Cookeville
Donovan, Daniel H, Cookeville
Douglas, Dale E, Cookeville
Flatt, Steven G, Cookeville
Flynn, Timothy J, Cookeville
Francis, William Clark, Cookeville
Franklin, Lloyd Douglas, Cookeville
Glasgow, Samuel McPheeters, Cookeville
Goff, Katherine W, Monterey
Goryl, Stephen V, Cookeville
Gotcher, Jane Anne, Cookeville
Gray, James C, Cookeville
Grisolano, James Martin, Cookeville
Hall, R Glenn, Cookeville
Hall, Richard S, Cookeville
Hassler, Lloyd R, Cookeville
Hensel, Albert Earl, Cookeville
Hollmann, Carl M, Cookeville
Humphrey, William Merritt, Cookeville
Ivey, George L, Cookeville
Jackson Jr, John M, Cookeville
Jain, Pushpendra K, Cookeville
Jordan III, Charles Edward, Cookeville
Klein, Karl, Cookeville
Landry, Robert Harrison, Cookeville
Lawrence, Thomas L, Cookeville
Limbacher, John P, Cookeville
Love, Stewart T, Cookeville
MacDonald, Lorraine Alice, Cookeville
McDonald, William W, Cookeville
McKinney, James Davis, Cookeville
Mead, George Olaf, Cookeville
* Moore Jr, John T, Algood
Moore, Lee Stuart, Cookeville
Pippin, Michael S, Cookeville
Rayne, Frederick S, Cookeville
Samples, Randall Gary, Cookeville
Shaw, James William, Cookeville
Sisko, Stephen J, Cookeville
Smith, Sullivan K, Cookeville
Snodgrass, Gregory Wayne, Cookeville
Starkweather, George Allen, Cookeville
Stout, Jeffrey Bunker, Cookeville
Strange, Danny Jay, Cookeville
Stuber, Harry L, Cookeville
Talmage, James B, Cookeville
Tansil, Donald Wayne, Cookeville
* Taylor, William Snodgrass, Cookeville
Vossel Jr, Louis F, Cookeville
* Williams, Claude M, Cookeville
Womack III, Charles T, Cookeville
* Zimmerman Jr, Guy, Byrdstown

ROANE-ANDERSON COUNTY MEDICAL SOCIETY

Ahler, Albert Julian, Harriman
Allen, Janet, Oak Ridge
Barron, David Michael, Oak Ridge
Barry, Frederick James, Oak Ridge
Bennett, William, Harriman
Bernstorf, Robert C, Oak Ridge
* Bigelow, Robert Ramsey, Oak Ridge
Bingham, Terry M, Harriman
Bingham, William Barry, Oak Ridge
* Bishop, Archer W, Clinton
Black, William John, Oak Ridge
Block Jr, Clement H, Oak Ridge
Bowles, Mark G, Oak Ridge
Boye Jr, Harry George, Harriman
Brantley, Richard Green, Oak Ridge
Bridgeman, Pamela A, Oak Ridge
Brown Jr, Geron, Oak Ridge
Brown, Roy Chester, League City, TX
Bruton Jr, Charles W, Oak Ridge
Bunch, Gary, Oak Ridge
Bunick, Elaine, Oak Ridge
Carter, J Brad, Oak Ridge
Casey, Robert Reid, Oak Ridge
Chasan, Stuart Alan, Oak Ridge
Clary, Thomas L, Oak Ridge
Compton, David R, Oak Ridge
Conrad, Daniel E, Oak Ridge
Corea, Charles Joseph, Rockwood
Cox Jr, James Kyle, Oak Ridge
Cross, Frances Lynn, Oak Ridge
Cunningham, Elbert C, Kingston
Darling Jr, Charles Ellett, Oak Ridge
* DePersio, John D, Oak Ridge
DeVega, Armando Fernando, Knoxville
Denton Jr, Randy L, Kingston
Dew, Richard Allan, Oliver Springs
Dotson, Robert Scott, Oak Ridge
Eatherly, Joseph Bruce, Oak Ridge
* Fortney, T Guy, Oak Ridge
Fuller, Robert Paul, Oak Ridge
Genella Jr, Frank H, Oak Ridge
Gentry, Robert E, Knoxville
Gillespie Sr, James Trigg, Oak Ridge
Goswitz, Francis Andrew, Oak Ridge
Goswitz, Helen A Vodopick, Oak Ridge
Gowder, Timothy Dennis, Oak Ridge
Gupton, Henry, Clinton
* Gurney, Charles Bryson, Oak Ridge
* Hardy, William P, Oak Ridge
Harrison, Stephen H, Oak Ridge
Hartman, Donald Lee, Oak Ridge
Headrick, Mary M, Oak Ridge
Heald, David Grant, Oak Ridge
* Hedden Jr, Henry, Clinton
Heintz, Richard, Knoxville
Hellmann Jr, Robert S, Harriman
Henry Jr, James E, Oak Ridge
Hicks, William M, Clinton
Hilton, James Isaiah, Oak Ridge
Hoover, Gregory K, Oak Ridge
Howard, Robert G, Oak Ridge
Huhta, Bradley D, Oak Ridge
Jernigan, John Forrest, Oak Ridge
* Jones, H Stratton, Harriman
Jones, Otis W, Oak Ridge
Kaebnick, Ernest Elliott, Oak Ridge
* King, Avery Parsons, Oak Ridge
Krishnan, Lalita, Oak Ridge
Lawson, M Wendell, Oak Ridge
Lech, Ronald, Oak Ridge
Lee, Larry H, Oak Ridge
Lessard, Jean, Oak Ridge
Lew, Ira Eugene, Oak Ridge
Long, David Dale, Oak Ridge
Loy, William Allen, Oak Ridge
Luckmann, Kenneth F, Oak Ridge
* Lushbaugh, Clarence C, Oak Ridge
Lynch, Thomas P, Oak Ridge
Mask, Van Steven, Oak Ridge
McKellar Jr, Duncan L, Oak Ridge
McLaughlin, Victor Wayne, Oak Ridge
McMahon, Cletus Joseph, Oak Ridge
McMillin, Rodney M, Harriman
McNeeley, Edward Trent, Norris
McNeeley, Howard B, Norris
* McNeeley, Samuel Gene, Norris
Metcalf IV, Joseph, Oak Ridge
Metcalf, Thomas H, Oak Ridge
Michel, James, Oak Ridge
Miller Jr, Kenneth T, Oak Ridge
Mitchell, Charles Stone, Oak Ridge
Molony, William Lawrence, Oak Ridge
Neal, Gary W, Knoxville
Oesch, Timothy Ralph, Oak Ridge
* Palmer, Etna Little, Oak Ridge
Paret, Robert W, Oak Ridge
Parrish, Richard E, Oak Ridge
Parrott, James A, Oak Ridge
Peabody, Brenda K, Oak Ridge
Pearson, Randall E, Oak Ridge
Peters, Scott W, Oak Ridge
Phillips, James, Oak Ridge
Pietrasz, Lech K, Oak Ridge
Posman, Clifford L, Oak Ridge
Prater, William K, Oak Ridge
* Preston, Lewis Frederick, Oak Ridge
* Pugh Jr, William W, Oak Ridge
Reid, Francis R, Oak Ridge
Ricks, Phillip M, Oak Ridge
Robbins, Randall R, Oak Ridge
Roberts, Anne Sanchez, Oak Ridge
Rouse, James M, Oak Ridge
Schultz, Richard L, Oak Ridge
Seay, David Worrell, Oak Ridge
* Sensenbach, Charles Willis, Oak Ridge
Sewall, Charles Gregory, Oak Ridge
Sharma, Mukesh K, Oak Ridge
Sharp, Donald Alan, Oak Ridge
* Sisk, John R, Knoxville
Smalley, Lee Alan, Oak Ridge
* Spray, Paul Ellsworth, Oak Ridge
Stanley, David Granville, Clinton
Sterling, Steven Lloyd, Knoxville
Stevens III, George Miller, Oak Ridge
Taylor, Susan Joanne, Oak Ridge
Tedder, Miriam B, Harriman
* Thomas, Daniel Martin, Clinton
Thurston, Floyd E, Oak Ridge
* Tittle, Joe Evan, Oak Ridge
Upchurch, D Thomas, Oak Ridge
Uzzle, Jeffrey Alan, Oak Ridge
Vargas, Eugenio, Oak Ridge
Weems, Alan McMurry, Oak Ridge
Weight, Glen R, Oak Ridge
Welch Jr, John William, Oak Ridge
Willett, Dwight H, Kingston
Wray, Ronald K, Oak Ridge
* Zanolli, Gino, Oak Ridge

ROBERTSON COUNTY MEDICAL SOCIETY

Bassel, John Burr, Springfield
Bazaldua, Gilbert, Springfield
Crunk, Tommy M, Springfield
Gray, James Travis, Springfield
Hartzheim, Paul D, Springfield
* Hayes, Warren G, Springfield
* Jackson, John McReynolds, Lebanon
Krueger, Thomas C, Springfield
Kumar, Sarbjeet Singh, Springfield
* Quarles, James Richard, Springfield
Rosario, Antonio, Springfield
* Stone, William Pipkin, Springfield
* Turner, John Bunyan, Springfield
Valosik, Robert A, Springfield
Vincent, Brant S, Springfield
* Webster, Raymond Harris, Springfield

RUTHERFORD COUNTY-STONES RIVER ACADEMY OF MEDICINE

Akin, Harold T, Murfreesboro
Al-Abdulla, Abdul-Sahib M, Murfreesboro
Alexander, John Hutchins, Murfreesboro
* Allen, James T, Murfreesboro
Andrews, Susan T, Murfreesboro
Bailey, Joseph C, Murfreesboro
Beasley, Timothy J, Murfreesboro
Bell, Richard Bryan, Murfreesboro
Boerner, James L, Murfreesboro
Boone, Joseph E, Murfreesboro
Bradley Jr, Donald H, Murfreesboro
Brown, William Andrew, Murfreesboro
Bryant, Gary B, Woodbury
Bryant, Rodney Craig, Woodbury
* Bryant, William Arthur, Woodbury
Bullock, Sally H, Murfreesboro
Butler Jr, Henry K, Murfreesboro
Byrnes, John M, Smyrna
Caissie, Kenneth F, Murfreesboro
Campbell, Jerry N, Murfreesboro
Campbell, Maura L, Murfreesboro
Carter, Dennis C, Murfreesboro
Carter, James T, Murfreesboro
Carter, Sam Frank, Murfreesboro
Chandler, Charles G, Murfreesboro
Clark, S Kathleen, Murfreesboro
Cleveland, Robert R, Murfreesboro
* Cohen, Henry A, Barrington, RI
Corlew, Daniel Scott, Murfreesboro
DeWeese, Gary Kenneth, Murfreesboro

Dixon, John Herman, Murfreesboro
Dodd, David T, Murfreesboro
Dray, Robert J, Murfreesboro
Eckles, George, Murfreesboro
Farooque, Ahmed I, Murfreesboro
Galloway, Russell E, Murfreesboro
Galloway, Sherry J, Murfreesboro
Garner Jr, James W, Murfreesboro
* Garrison Jr, Sidney C, Murfreesboro
* Garrison, R James, Murfreesboro
Goodman Jr, Charles E, Murfreesboro
Goolsby III, Henry J, Murfreesboro
* Green, Richard E, Woodbury
Gross, William E, Murfreesboro
* Hauser, Fred Warren, Murfreesboro
* Hay, Sam H, Murfreesboro
Hazley, Andrew John, Murfeesboro
Hester, George S, Murfreesboro
Hopkins, G David, Murfreesboro
Hornsby, Robert Preston, Murfreesboro
Hudson, David Lee, Murfreesboro
* Hutchison, Norton H, Brentwood
Ingle, Robert P, Murfreesboro
Jekot, William J, Murfreesboro
Johns, O Tom, Murfreesboro
Johnson, David L, Murfreesboro
Jordan, Michael R, Murfreesboro
* Kaufman, James Kenneth, Murfreesboro
Knight, Joseph C, Murfreesboro
Knight, Robert T, Murfreesboro
Knox, Robert Lee, Murfreesboro
LaRoche, Elizabeth R, Murfreesboro
LeDoux, Paul David, Murfreesboro
Lewis, Charles W, Murfreesboro
Lien, George Harrison, Murfreesboro
Long, Sammie Inez, Nashville
* Lovelace, Fred R, Murfreesboro
Lowe, Lisa Lynn, Murfreesboro
Lowery, E Ray, Murfreesboro
McKnight, David T, Murfreesboro
McPherson, Warren F, Murfreesboro
Menke, Paul G, Murfreesboro
* Moore, Ralph B, Candler, NC
Moss, Max L, Murfreesboro
Mullen, Stanley P, Murfreesboro
Murphy, Wayne, Murfreesboro
Noah, William H, Murfreesboro
Nunnery, James A, Murfreesboro
* Odom, Eugene P, Murfreesboro
Odom, Steve G, Murfreesboro
Ours, David E, Murfreesboro
Owen, Ann B, Murfreesboro
Payne, Stephen James, Murfreesboro
Pearson, John G, Murfreesboro
Polk, T Allen, Murfreesboro
Putatunda, Bhabendra N, Murfreesboro
* Ransom, Robert G, Murfreesboro
Reuhland, Leon L, Woodbury
Richerson, Dennis Ray, Murfreesboro
Rogers, Richard A, Murfreesboro
Rudd, J Daniel, Murfreesboro
* Shacklett, William W, Murfreesboro
Shelton, Ben A, Smyrna
Shepard, Theodore G, Murfreesboro
Singh, Ravi P, Murfreesboro
Smith, Radford, Murfreesboro
Starrett, James Alan, Murfreesboro
Swafford Jr, Carl A, Murfreesboro
* Tenpenny, James W, Murfreesboro
Tolbert, E C, Murfreesboro
Tuma, Robert P, Murfreesboro
* Turner, Thomas A, Brentwood
Westmoreland, M Wayne, Murfreesboro
Williams, Kenna Jane, Cookeville
Williams, Olin, Murfreesboro
Winters, Deborah Ann, McMinnville
Witt, Terry J, Murfreesboro
Wolf, Herbert Richard, Woodbury
Wolohon, Charles Tom, Murfreesboro
Wright, Andrew Maurice, Murfreesboro
Young, J Howard, Murfreesboro

SCOTT COUNTY MEDICAL SOCIETY

Coffey, David B, Oneida
Hall, Thomas K, Oneida
Huff, Maxwell E, Oneida
* Leeds, Horace Mott, Oneida
Perry, Larry E, Oneida
Royer, John M, Knoxville
Spjuth, Sven Olof, Oneida

SEVIER COUNTY MEDICAL SOCIETY

Bozeman II, Charles H, Sevierville
* Hickman Jr, James H, Kodak
Higgins, Laura E, Sevierville
Hillman, David Carl, Sevierville
Jacobs Jr, John C, Sevierville
Kidd Jr, Charles E, Sevierville
* Knopp, Frank, Gatlinburg
McGaha, Samuel W, Sevierville
* Murphy, Richard S, Kodak
Penny III, Wade Hampton, Sevierville
* Roach, Charles L, Sevierville
Smith, Steven M, Sevierville
Sonner, John L, Sevierville
Tolley, Vincent Blane, Sevierville
* VanArsdall, James R, Blountville
Whiton, Alan Louis, Sevierville

SMITH COUNTY MEDICAL SOCIETY

Bratton, Edgar K, Hartsville
Duke, Roger, Carthage
Farrar, Henry C, Carthage
* Green, Hugh E, Carthage
* Petty, David G, Carthage
Rutherford, Richard T, Carthage
West, Michael H, Carthage

SULLIVAN COUNTY MEDICAL SOCIETY

Adams, Wesley F, Bristol
Addington, Darryl Stephen, Kingsport
Agel, John Frederick, Kingsport
Aguirre, Dennis Manual, Bristol
Armstrong, Joseph R, Bristol
Aspley, Donald, Kingsport
Bachman Jr, Harry Wilson, Bristol
Baker, Richard Dudley, Kingsport
Ballington, Karen Louise, Bristol
Bechtel Jr, Jack T, Bristol
Beeson, Broadus Monroe, Bristol
Bell, William M, Kingsport
Bertuso, John Richard, Kingsport
Bible, Michael W, Bristol
Bice, Charles Robert, Kingsport
Birkitt Jr, Glenn Hunter, Bristol
* Blanton Jr, Frank S, Bristol
Blickenstaff, Theron, Kingsport
Boggan, Michael D, Kingsport
Boling, Frederick F, Kingsport
Bookout, J Michael, Kingsport
Bowman, James H, Bristol
Boyd, Arthur Morgan, Kingsport
Boyle, Gary, Bristol
Boyle, J William, Kingsport
Brasfield, Jim C, Bristol
Breeding, Samuel David, Kingsport
* Brinkley, Billy Booth, Bristol
Brock Jr, Howard Thomas, Kingsport
Broglio, Anthony Lee, Bristol
* Brookshire Jr, Paul F, Kingsport
* Brown, Henry James, Kingsport
Buddington, Richard S, Bristol
Bulle, Thomas Michael, Kingsport
Bush, Gary Edward, Kingsport
Butler, Steven C, Kingsport
Butterworth Jr, Jackson, Bristol
Byers Jr, John G, Bristol
Byrd, Keith Harold, Kingsport
Calcote, Claude McGhee, Bristol
Caldwell, Ronald David, Bristol
* Carter, Edward Kent, Naples, FL
Carter, Locke Yancey, Kingsport
Carter, Richard S, Kingsport
Casey, Gary Quillen, Kingsport
Cassedy, Kelly James, Kingsport
Chamberlin, Marian L, Kingsport
Chandler, John M, Bristol
Chapman, John L, Kingsport
Chartier, Gilbert John, Kingsport
* Chew, Nathaniel John, Bristol
* Christensen, Robert Charles, Kingsport
Clark, James W, Church Hill
* Clark, Warner L, Church Hill
Clemens, Elizabeth Anne, Kingsport
Colquitt, Landon Armstrong, Kingsport
Coogan, Joan C, Bristol
Cooper, Joe Byron, Kingsport
Cowan Jr, Bennett Y, Bristol
* Cowan, Bennett Young, Bristol
Cowden, David Anthony, Kingsport
Cox, Larry H, Kingsport
* Crawford, Alvin S, Hilton Head Island, SC
Crockett Jr, Claude H, Bristol
Crowder, Jack Roberts, Kingsport
Davis, R Alan, Bristol
Delwadia, Andy D, Kingsport
Dewey, Carol Ann, Bristol
Dickerson, Daniel Lawrence, Kingsport
Doell, Robert J, Kingsport
Donaldson, Robert C, Blountville
* Doty Sr, Robert D, Kingsport
Dyer Jr, William Mills, Kingsport
* Early, James Lawrence, Bristol
Edenfield, Mark E, Kingsport
Elderbrock, William Burley, Kingsport
Emery, Mark W, Kingsport
Estes, Terrell C, Bristol
* Exum, William Allen, Christiana
Falchook, Frederick Steven, Milledgeville, GA
Falconer, Randall J, Kingsport
Feit, Richard A, Kingsport
Ferguson, Jere W, Bristol
Fincher Jr, John A, Bristol
Fleenor, Michael R, Bristol
Flora, Don Atlee, Kingsport
Fontaine, Darryl, Kingsport
Foster, Larry J, Kingsport
Franzus, David Harold, Kingsport
Funke, Robert H, Kingsport
Gangwer, Matthew Morgan, Bristol
Gantt, Pickens A, Kingsport
* Garfield, Claude R, Kingsport
Garriott, David Kent, Kingsport
Gash, Denny Lynn, Kingsport
* Gaylor, Walter R, Bristol
Geer, Robert Mac, Kingsport
Gendron, R M, Kingsport
Ginn, David Roy, Kingsport
Ginther, Jeffrey P, Bristol, VA
Glasgow, Robert Morris, Bristol
Goh, Kenton B H, Kingsport
* Golden, Billy N, Kingsport
Gonce, Joel D, Kingsport
* Green Jr, Waverly S, Bristol
Greene, Charles David, Kingsport
Greene, Thomas C, Bristol
Grenvik, Stefan J, Bristol
Griffin, William C, Kingsport
Griffith, John Gregory, Bristol
* Grigsby Jr, William C, Bristol, VA
Grigsby, William Paul, Kingsport
Groce, Ann, Kingsport
Gwaltney, David Nelson, Bristol
Haddad, Michel Nasri, Kingsport
Harris, Wesley J, Bristol
* Harrison Jr, William, Kingsport
* Harter, Basil T, Bristol, VA
Helms III, Ernest Little, Kingsport
Hernandez, Gustavo E, Kingsport
Hickam, Charles R, Kingsport
Hicks, Mack L, Kingsport
Hire, Ervin A, Kingsport
Hixson, Clair S, Kingsport
Hoffer, Phillip Franklin, Bristol
Hoffnung, Jack, Bristol
* Hogan Jr, Marshall Davis, Kingsport
Houston, Charles Stephen, Kingsport
Hubbs, Doris Taam, Kingsport
Hudgens, David Roubin, Abingdon, VA
Hudson, William Dudley, Kingsport
Hunter, Ronald W, Kingsport
Hutchison Jr, John E, Bristol
Jackson Jr, Henry Guy, Kingsport
Jackson, Sharon Ann, Kingsport
Jacobson, Stephen G, Kingsport
* Jamison, King Arcy, Bristol
Jarboe, Edith Rodgers, Blountville
Jayne Jr, J Lawrence, Bristol
* Jernigan, Robert H, Kingsport
Jewell, Neal A, Bristol
Johnstone, William H, Bristol
Jones, Lesley Ann, Gate City, VA
* Jones, Robert Clark, Kingsport
Jones, Samuel Riddle, Kingsport
Kappa, Jeffrey Ray, Kingsport
Kazmier, W Jan, Kingsport
Keene, Charlotte S, Kingsport
Kelly, Ronald Clark, Bristol
Kidwell Jr, E R, Kingsport
Klinar, Daniel Franklin, Kingsport
* Knapp, John Allen, Fort Myers, FL
Knickerbocker, Fred Ray, Bristol
Kurre Jr, Joseph H, Bristol
Kutty, I N, Kingsport
Ladley, Herbert Deross, Kingsport
Lane, David L, Kingsport
Lapis, James L, Bristol
Ley, Joseph Anthony, Kingsport
Link, Nelson Edward, Bristol
London, Jerry Frank, Kingsport
Lovelace, Donald Ray, Kingsport
Lowry, Kermit, Bristol
Lymberis, Marvin, Kingsport
Lynch, Kenneth Clyde, Kingsport
MacDonald, R Scott, Kingsport
Marshall, John M, Kingsport
McClintic, Eugene C, Bristol
* McConnell, Fredrick Gray, Kingsport
McCoy, James L, Kingsport
McGinn, Debra Lee, Kingsport
McGuire, James Eldridge, Kingsport
McIlwain, William A, Bristol
McKay, Robert D, Bristol
McMurray, John Mark, Kingsport
Melvin, Frank Michael, Kingsport
Merrill, James Jay, Kingsport
Miller, David, Kingsport
Miller, Jerry Lee, Kingsport
Mishkin, Fredric Ronald, Kingsport
* Mitchell, Joe Elias, Bristol, VA
Mitoraj, Thomas E, Bristol
Moffet, Eric David, Kingsport
Mooney, Neil Francis, Bristol
Moore III, John H, Kingsport
Morgan, Steven W, Bristol
Morris, Christopher Richard, Kingsport
Morris, Lawrence Ray, Kingsport
Morton, Ralph F, Kingsport
Mosrie, Azett Jimmie, Kingsport
* Murray Jr, Marion Julian, Bristol
Neely, E R, Kingsport
Nelcamp, Gregory A, Johnson City
* Nichols Jr, James B, Kingsport
Nicley, Floyd Edward, Bristol
Northrop, Robert Edwards, Kingsport
Olney, La Verne E, Kingsport
Overbay, Mark Richard, Piney Flats
Patton, Charley Mack, Kingsport
Patton, Robert Carroll, Kingsport
Penny, Richard M, Bristol
* Perlman, Paul Elliot, Kingsport
* Pettigrew, James Andrew, Jonesborough
Phillips, James B, Kingsport
Phillips, James Curtis, Kingsport
Phillips, Michael S, Kingsport
Platt, William Marshall, Kingsport
* Powers Jr, John S, Kingsport
Pugh, Thomas F, Kingsport
Quinn, Donald, Blountville
Rash, J Patrick, Kingpsort
Reddick, Lovett P, Kingsport
* Reed, John S, Kingsport
Reiff, Robert H, Kingsport
Renfro, Clay Arlen, Kingsport
* Repass, Robert A, Bristol, VA
* Reynolds Jr, Leslie B, Kingsport
Richards, R Henry, Abingdon, VA
Ridgeway, Nathan Alvah, Kingsport
Robbins, Jeffrey Philip, Bristol
* Rogers, Malcolm E, Kingsport
Rogers, Robert Andrew, Kingsport
Rolen, Alvin Curry, Bristol
Rosser, Robert A, Kingsport
Russell, David Paul, Bristol
* Salcedo, Julio A, Kingsport
Sargent, Jeffrey Dale, Bristol
Saunders, Robert, Kingsport
Schermer, William J, Bristol
Schilling, David E, Church Hill

Sewell, David H, Kingsport
Shone, Dallas Norman, Kingsport
Sides Jr, Paul J, Kingsport
Sikora, Frank Steven, Bristol
Slaughter, Frederick D, Bristol
Slocum, Carl William, Kingsport
Smiddy, Joseph F, Kingsport
Smith, Galen R, Kingsport
Smith, Ken W, Kingsport
* Smith, Lyle R, Kingsport
Smith, Ronald Steven, Kingsport
Smith, William David, Bristol
Sobel, Abraham Isaac, Kingsport
Solomon, Dale E, Kingsport
Spear, John Michael, Bristol
Springer, Douglas John, Kingsport
Stout, Marshall J, Johnson City
Strader, Lorenzo D, Bristol
Strang Jr, Robert T, Kingsport
* Strang, Robert Tudor, Kingsport
Strickland, Robert Douglas, Kingsport
Sulkowski, Viktor P, Kingsport
Sullivan, Hugh Milton, Kingsport
Sullivan, Michael Jude, Kingsport
Sweitzer, Donald Edward, Bristol
Tagert, Bert Edwin, Bristol
Talton Jr, Brooks M, Kingsport
Thibault, Lenita H, Kingsport
Thompson, David E, Bristol
* Todd, Thomas C, Bristol
Turner, Harrison D, Kingsport
* Valdes-Rodriguez, Antonio, Atlanta, GA
* Vance Jr, Frederick V, Bristol
Wadewitz, Peter, Kingsport
Wallen, Neil D, Bristol
Weir, William Strickland, Bristol
Westerfield, Larry H, Kingsport
Westmoreland, Dennis G, Kingsport
Whisnant, William Howard, Bristol
* Whitaker Jr, Sidney S, Bristol
* Whitt, Hiram Jackson, Kingsport
Wike, Sidney Alfred, Bristol
Williams, Douglas P, Bristol
Williams, Robert Herman, Kingsport
Williams, Timothy Michael, Kingsport
Wilson, Earl K, Bristol
Windes, Lois H, Kingsport
Winsor, Michael Jon, Kingsport
Wolfe, James W, Gate City, VA
Wood Jr, Matthew W, Bristol
Woodley, Steven E, Kingsport
Wyker, Arthur Townsend, Kingsport
Yallourakis, Stephen James, Kingsport
Young, Ruth T, Kingsport
Zaidi, Sarfraz Ali, Bristol

SUMNER COUNTY MEDICAL SOCIETY

Bartek, Anne P, Gallatin
Bartek, John G, Gallatin
Beaver, B Daniel, Portland
* Blackshear, J R, Gallatin
Brown, Lloyd Tynte, Gallatin
Burrus, R Grady, Hendersonville
Cagle, Diedre, Gallatin
Caldwell, William Rudolph, Gallatin
Carey Jr, Jack Willard, Hartsville
Carter, Thomas Foster, Westmoreland
Cox, Joe David, Gallatin
Critz, George Theodore, Gallatin
Diaz, Michael C, Hendersonville
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Flynn, John, Nashville
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Gillespie, James Robert, Hendersonville
Goodin, Ellis Len, Gallatin
Green, Michael Edward, Gallatin
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Harrison, Duane E, Madison
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Hooper Jr, H Wayne, Gallatin
Hooper, Halden Wayne, Gallatin
King, A Sidney, Gallatin
Landsberg, Robert P, Hendersonville
Lilly, James Aaron, Gallatin
Little III, Walter F, Hendersonville
Loven, Keith H, Goodlettsville
MacConnell, Clayton, Gallatin
* Massey, William Roe, Gallatin
McAleavy, John C, Hendersonville
McCuskey, Scott, Hendersonville
McDaniel, Robert E, Gallatin
Miller, Ronald V, Gallatin
Newsom, David L, Gallatin
Ponce, Lu, Portland
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Ruckle, R H, Portland
Sanders, Clarence Ramey, Gallatin
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Thompson, John K, Gallatin
Todd, M Alfred, Gallatin
Tormes, Felix R, Gallatin
* Troutt Jr, James R, Gallatin
Varner, James W, Hendersonville
* Wallace, John B, Gallatin
Webb, Robert T, Gallatin
Webster, Robert Clayton, Gallatin
Wesley, Raymond, Hendersonville
Willis, Robert A, Gallatin
Wolfe, Jimmy Vernon, Madison
Wright, Don A, Gallatin

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Beasley, Jimmie L, Covington
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Crown, Loren Arthur, Memphis
Dodd, Robert T, Covington
Goode, Fletcher Howard, Millington
Ho, Juinn H, Millington
* Hyatt, Norman Lyle, Covington
Janovich, John R, Covington
Jonas, Karl C, Covington
Matthews, Barret, Covington
McCullough, Bill S, Covington
Vaughn, Hugh Wynn, Munford
Viprakasit, Dejo, Covington
Viprakasit, Suttiwara, Covington
* Witherington Jr, A S, Munford
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Caten, Joseph, McMinnville
Chastain, Bryan D, McMinnville
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Webb, Clinton Steve, Johnson City
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- Williams, Tom, Johnson City
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Williams, Henry Jackson, Johnson City
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Williams, William T, Jonesborough
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Wilson, James Marion, Johnson City
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Wireman, Jill W, Johnson City
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- Woody, Dawn, Johnson City
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Wyche, Mary, Johnson City
- York, Jackie, Johnson City
Young, Amy B, Johnson City

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Bradley Sr, Donald Hughes, Sparta
Drake, Alan, Sparta
Gentry, Chet Mason, Sparta
Johnson, Joel F, Sparta
* Mitchell, Charles A, Sparta
Nesbett, Billy C, Sparta
* Smith, Leighton H, Sparta

WILLIAMSON COUNTY MEDICAL SOCIETY

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Arevalos, Enrique Romo, Brentwood
Ashworth, Rodney Brian, Franklin
Bastian, Samuel Ray, Franklin
Bethurum, Alva Jefferson, Franklin
Brooks, Arthur Scott, Franklin
Browne, Harry G, Nashville
Burgos, Elizabeth B, Franklin
Caudill, Max T, Franklin
Clarke, Lois, Franklin
Coggeshall, Jack W, Franklin
Cook, Jeffrey Wade, Franklin
Cook, W Gregory, Franklin
Curtis, Shannon, Franklin
Des Prez, Karen Carlson, Nashville
Dodge, Kenneth Brenton, Franklin
Dykes, Katherine Anne, Franklin
Evins, Starling Claude, Franklin
Ferrell, M Craig, Franklin
Flanagan, John F K, Franklin
* Guffee, Harry Jasper, Franklin
Haley, Fred L, Franklin
Halford, William Daniel, Franklin
* Halliday, William R, Nashville
Himmelfarb, Elliot Harvey, Brentwood
Hollister, Robert Morris, Franklin
Holly, Howard Rhea, Franklin
Hutcheson Jr, Robert Henry, Franklin
Jantz, Thomas Augustus, Brentwood
Kennedy, James S, Franklin
Lane, Richard Geoffrey, Franklin
Langford, Michael D, Franklin
Lee, Anthony Joel, Franklin
Locke, Joel R, Franklin
Manson, James Edward, Franklin
McCauley, Jimmy Dale, Franklin
McCroskey, Debra J, Franklin
McGinley, James Henry, Franklin
Meneely, Raymond L, Franklin
Miller, Philip G, Franklin
Mishu, Mona Kirma, Brentwood
Mullins, W Michael, Franklin
Nagy, Huba, Franklin
Netherton, Cynthia L, Franklin
Oldham, Robert Kenneth, Franklin
Parker, Scott R, Franklin
Parsons, Paul D, Franklin
Powell, James E, Franklin
Rhea, Karen Ann, Franklin
Russell, Henry P, Franklin
Savage, H Bryant, Franklin
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Thomas, Paul A, Franklin
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Wallwork, J Caleb, Brentwood
White, Bobby Joe, Franklin
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Willoughby, Joseph Leeper, Franklin
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Dedick, Paul, Lebanon
Evans, Randolph R, Lebanon
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Grover, Robert S, Mount Juliet
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TMA continuing medical education opportunities

TMA is accredited by the Accreditation Council for Continuing Medical Education (ACCME) as a sponsor of continuing medical education for physicians. As an accredited sponsor, TMA is authorized to designate certain CME activities for credit in the AMA Physician's Recognition Award Program.

TMA is recognized by ACCME as the accreditor of institutions in Tennessee conducting intrastate CME programs. Any organization conducting such programs may apply to TMA for accreditation as a sponsor of CME.

Inquiries regarding application for accreditation as a sponsor of CME should be made in writing to: Director of Continuing Medical Education, Tennessee Medical Association, PO Box 120909, Nashville, TN 37212-0909.

IMPORTANT NOTICE

Published in this section are many educational opportunities which come to our attention which might be of interest to our membership. As some of these are very long, full year schedules, and others are detailed descriptions of courses, in order to conserve space, most of them will be published in only one issue of the Journal.

IN TENNESSEE

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Clinical Training Program

The doctor and faculty plan an individualized program to meet the physician's practice needs. This may include contact with patients, participation in clinical rounds and diagnostic procedures, interaction with faculty and housestaff, access to the Medical Center Library and other learning resources, and other benefits of a preceptorship. AMA/PRA Category 1 credit is provided for each hour of participation. Physicians *must* be licensed and be in active practice with evidence of liability coverage.

Ongoing Rounds and Conferences

Arrangements can be made for licensed practicing physicians to attend for credit.

Special Conferences/Seminars

Detailed brochures for the following courses are available. In some cases, registration numbers are limited.

Jan. 28-Feb. 3	Practical Aspects of Diagnostic Radiology/Medical Imaging—Snowmass Village, Colo.

For information contact Division of CME, Vanderbilt University School of Medicine, D-8211 MCN, Nashville, TN 37232, Tel. (615) 322-4030.

MEHARRY MEDICAL COLLEGE

Extended Continuing Education Program

Arrangements have been made with many services and departments in the medical school to allow practicing physicians to participate in the service's activities for a period of one day to one week. This program provides an opportunity for physicians to study in depth for a specified period. The schedule of activities is individualized in response to the physician's request by the participating department. The experience includes conferences, ward rounds, audiovisual materials and contact with patients, residents and faculty.

Fee: $75 per day or $275 per five-day week of educational experience including lunch and parking at Meharry Medical College. *Credit:* AMA Category 1 of the Physician's Recognition Award, AAFP, and Continuing Education Units from Meharry Medical College. *Application:* For information contact Henry A. Moses, Ph.D., Director of Continuing Education, Meharry Medical College, 1005 D.B. Todd Blvd., Nashville, TN 37208, Tel. (615) 327-6235.

UNIVERSITY OF TENNESSEE

Continuing Education Schedule

Memphis

Jan. 12-13	High Risk Perinatal Conference
Feb. 17-27	Clinical Medicine—Maui, Hawaii
Feb. 19-22	Update in Obstetrics and Gynecology—Grand Cayman Island
Feb. 24-25	Radiology Conference
March 11-15	Ob/Gyn Ski—Snowmass, Colo.
March 16-22	29th Annual Review Course for the Family Physician
March 26-31	Symposium on Critical Care and Emergency Medicine—Hot Springs, Ark.
May 8-12	Perinatal Social Work
June 6-7	General Surgery Update
July 22-27	Contemporary Issues in Obstetrics and Gynecology—Destin, Fla.
Aug. 17-22	Pharamacology of Thermoregulation
Sept. 19-20	28th Conference on the Mother, Fetus, and Newborn

Chattanooga

Feb. 18-23	Clinical Medicine—Maui, Hawaii
March 28-29	Pediatrics
June 26-29	Family Medicine Update

For information contact Mrs. Jean Taylor Bryan, Office of CME, University of Tennessee, 800 Madison Ave., Memphis, TN 38163, Tel. (901) 448-5547.

OF SPECIAL INTEREST

TULANE UNIVERSITY

Feb. 9-11	Neuropsychiatric Aspects of Primary Care—Royal Sonesta Hotel, New Orleans
Feb. 16-18	Incontinence Update 1996—Hyatt Regency, New Orleans
Feb. 17-19	Mardi Gras Anesthesia Update—Westin Canal Place Hotel, New Orleans

For information contact Pamala A. Schmidt, Program Coordinator, Tulane Office of Continuing Education, 1440 Canal St., Suite 1611, New Orleans, LA 70112, Tel. (800) 588-5300.

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